

Electronic Mail

By Claudia Lynch, Benchmarks Editor (AS04@unt.edu)

As you can see, the theme of this issue is "electronic mail." This topic is probably nearer and dearer to more people on campus than any other that has been covered in *Benchmarks*. Most people have, at one time or another, been involved with using some form of electronic mail (commonly known as E-mail).

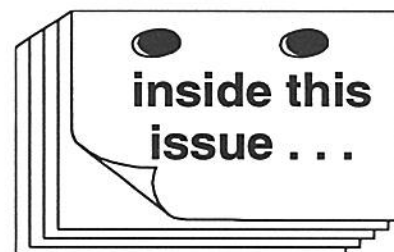
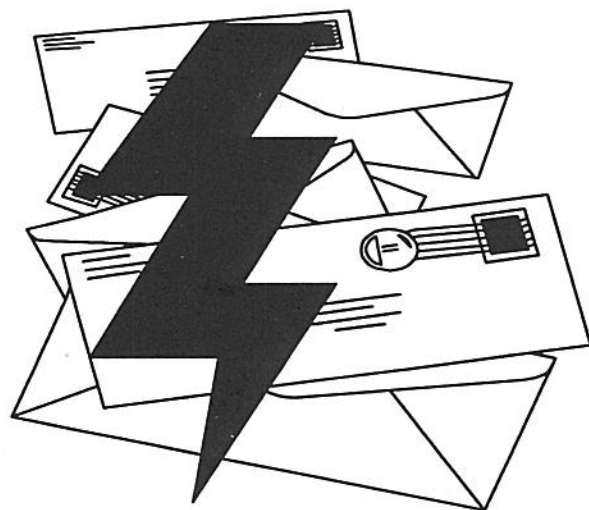
This issue contains a lot of exciting news on the E-mail front. The "Electronic Mail Task Force" has made a great deal of progress in their mission to "evaluate, recommend, and implement a University-wide electronic mail system." A report from that task force can be found on page 3.

Another topic of concern to many people is transferring messages between different types of mail systems. The article on page 4, "Electronic Messaging with NetWare

Message Handling Service (MHS)," addresses this topic and offers some strategies for WordPerfect Office and Pegasus mail users at UNT and TCOM. The upgrade to Version 3.1 of WordPerfect Office Mail is described on page 6.

NT Gopher, a very useful information service with a lot of potential for making everyone's life easier is described on page 8. NT Gopher is in a trial stage right now. Give it a try, and discover the wonderful world of "instant information."

There are many more useful and informative articles in this month's *Benchmarks*. You will get some hints on tracking down people's E-Mail addresses on page 9; understanding E-Mail addressing on page 10; and rules and regulations for using WANs on page 12. So keep reading, the wonderful world of electronic mail is just a page turn away. ■



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☆ UNT COMPUTING CENTER ORGANIZATION AND FACILITIES ☆

The UNT Computing Center is located in the Information Sciences Building (ISB), Room 119. Phone: (817) 565-2324 (TDD 1-800-RELAY-TX), unless otherwise noted. It is divided into the following areas:

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- ISB 110 General Access Lab (817) 565-3048
- Mainframe User Services
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- VAX/UNIX Systems (817) 565-4161

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- Data Communications
- Microcomputer Application Support
- Network Systems Support

☐ **Administrative Computing:**

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- Database/Central Programming Support
- General Data Systems
- NT/TCOM Fiscal Data Systems
- NT/TCOM Payroll/Personnel
- Student Records
- Student Services
- Voice Response Applications

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Phone numbers for accessing UNT computing systems:

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 300-9600 BAUD: (817) 565-3461
 300-2400 BAUD: D/FW METRO 792-4140

Area code 214 must dial 817 before the METRO #. Note: Dialing 1 before the area code will result in a long distance charge.

Set Data Bits to 7, Parity to S, and Stop Bits to 1. When dialing in, the autobaud feature requires you to hit the <RETURN> key repeatedly after the connection is made so that the receiving modem can determine the baud rate. When you see the prompt (# for local numbers, UNTMODEMS> for the metro lines) you can enter one of the following commands to connect with the system of your choice.

SYSTEM	SYTEK/DENTON LINES (#)	METRO LINES (UNTMODEMS>)	INTERNET (CUTCP, NCSA)
ACS Host Systems			
MUSIC/SP (line editing & PCWS)	CALL 8040	N/A	N/A
Academic Mainframe (MUSIC, CMS, Academic COM-LETE)	CALL 3270	CONNECT VM3270	tn3270 vm.acs.unt.edu —OR— telnet vm3270.acs.unt.edu
VAX (VMS)	CALL DEC	CONNECT DEC	telnet vaxb.acs.unt.edu
Solbourne (UNIX)	CALL 900	CONNECT SOL	telnet sol.acs.unt.edu
Departmental Systems			
Computer Sciences Sequent (Ponder)	CALL 780	CONNECT PONDER	telnet ponder.csci.unt.edu
UNT Libraries' on-line card catalog	CALL 3000	CONNECT LIBRARY	telnet library.unt.edu

To exit from the local phone lines, press <ESCAPE><RETURN>, and type DONE (at the # prompt), then press <RETURN><RETURN>. To exit from the metro lines, press <CTRL-SHIFT-6>, then type DISCONNECT (at the UNTMODEMS> prompt), then press <RETURN>. Exiting from telnet and TN3270 is dependent upon the package. CUTCP uses <ALT-X>.

HOURS FOR UNIVERSITY OF NORTH TEXAS COMPUTER ACCESS AREAS : Summer 1992

Day of Week	Willis	ISB 110	BA, Chilton, Matthews	GAB	Terrill, Wooten	ISB 205C	Lab Locations
Monday - Thursday	Open 24 hours	7:30 a.m. - 10 p.m.	8 a.m. - 10 p.m.	8 a.m. - Midnight	8 a.m. - 6 p.m.	Noon - 10 p.m.	☉ BA: 330, 332 ☉ Chilton Hall: 255, 116 [Adaptive Lab] ☉ GAB: 330, 550 ☉ ISB: 110, 205C — grad. students only ☉ Matthews: 309 ☉ Terrill 247 ☉ Willis: 134 ☉ Wooten: 120
Friday	Open 24 hours	7:30 a.m. - 6 p.m.	8 a.m. - 5 p.m.	8 a.m. - 3 p.m.	8 a.m. - 3 p.m.	1 p.m. - 5 p.m.	
Saturday	Open 24 hours	10 a.m. - 6 p.m.	10 a.m. - 5 p.m.	Closed	Closed	10 a.m. - 5 p.m.	
Sunday	Open 24 hours	1 p.m. - 10 p.m.	1 p.m. - 10 p.m. Chilton 255 closed	2 p.m. - Midnight	Closed	1 p.m. - 5 p.m.	

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Electronic Mail Task Force: A Progress Report

By Bill Buntain, Director of Network and Microcomputer Services (Buntain@ccl.unt.edu)

The Electronic Mail Task Force was formed in March of 1991 at the request of Dr. Blaine Brownell, the UNT Provost and Vice President for Academic Affairs. The basic charge of the committee is "to evaluate, recommend, and implement a University-wide electronic mail system." The committee is chaired by Dr. Paul Schlieve of the Computer Education and Cognitive Systems faculty in the College of Education.

The task force has been conducting an extensive evaluation of campus-wide electronic mail alternatives. Nine major commercial E-mail products have been reviewed, along with three UNIX-based architectures and the freeware program Pegasus Mail. During the course of this year Pegasus Mail for DOS and Macintosh joined WordPerfect for DOS as supported E-mail software on the UNT Supported Computing Items List. In general, WordPerfect Office has been used to link offices for administrative communications. Pegasus Mail supports excellent mail exchange services with wide area networks.

At the outset the task force determined that no less than fourteen different mail systems are in use on campus on a variety of hardware platforms. One of the goals of the task force is to find a system or an architecture which allows a user to have access to all of their mail regardless of the client platform they are using to access it. There appears to be movement towards this both in standards and in industry offerings, but the task force was not fully satisfied with any of the solutions currently available.

The E-mail alternatives evaluated have diverse strengths and weaknesses, but at the present time, the task force does not find a *compelling* reason to change to a campus-wide E-mail standard other than its present commitment to WordPerfect Office and Pegasus Mail. However, the task force is continuing to monitor developments in the E-mail industry as well as work being done in academic institutions to deliver UNIX-based mail services. Of particular interest are: the emergence of E-mail products adhering to the X.400 and X.500 standards as well as the Internet MIME protocol for multimedia mail; the anticipated release of Novell's 3.2 operating system with its Global Directory Services and of Novell's Global Messaging Services, which integrates Novell's Message Handling Service (MHS); the Simple Mail Transfer Protocol (SMTP); and the X.400 protocol into a set of NetWare Loadable Modules that become an integral part of the operating system on NetWare file servers.

In addition to the long-term evaluation, the task force has recommended or approved several interim solutions to improve electronic messaging at UNT. Among these are:

- The hiring of an Electronic Mail Analyst to assist the task force in the evaluation process and to take the lead in implementing electronic messaging strategies for the campus. Mike Murdock was hired into this position effective 12/12/91.
- The installation of a Charon gateway in the Computing Center to allow Pegasus Mail users to exchange mail with the Internet.

- The installation of a second WordPerfect Office connection server to expand the on-campus connectivity of that system. Offices added to the expanded system include the Personnel Office, the Payroll Office, the Division of Student Affairs, the Physical Plant (with Telecommunications), and the offices in the University Services Building. We anticipate expansion of services in the Administration Building to include all offices with networked microcomputers upon approval and hiring of a network manager for that building.
- Establishing an MHS gateway E-mail exchange between UNT and the Texas College of Osteopathic Medicine in Fort Worth.

In addition, the following initiatives are also currently being pursued:

- Connecting all individuals on the UNT Administrative Distribution List and on key university committees.
- Development of a system to simplify maintenance of WordPerfect Office mail access rights and user groups.
- Testing of an SMTP gateway for WordPerfect Office. This would allow WordPerfect Office Mail users to exchange mail with the Internet.

The task force will also be exploring strategies for electronic authorizations and student mail and developing guidelines for the appropriate use of electronic mail. Computing Center staff working with the task force are also participating in statewide committees on electronic messaging. The goal of these committees is to establish standards and an infrastructure for electronic communications among state agencies. ■

Electronic Messaging with NetWare Message Handling Service (MHS)

By Mike Murdock, E-Mail Analyst (Murdock@cc1.unt.edu)

For many people, electronic messaging has become an essential part of the computing lifestyle. Electronic messaging includes many forms of information transfer. Among them are workgroup computing, FAX mail, voice mail, forms processing and electronic mail (E-mail). For local area network users at UNT, the primary type of electronic messaging utilized is E-mail. Currently, Pegasus Mail for the Macintosh and the PC and WordPerfect Office Mail for the PC are supported. There are other E-mail packages in use at UNT, but these two are the ones that are officially supported on local area networks. At TCOM, QuickMail for the Macintosh and the PC and Da Vinci eMail for the PC are in use.

Electronic messaging consists of three major components: the store-and-forward messaging engine, the messaging applications that make use of it, and gateway services. For E-mail, the "messaging application" is the part of the system that the you utilize. Through the messaging application's user interface, you create a mail message. Then the application delivers the message to the "store-and-forward messaging engine" which routes and transfers the message from one location to another, perhaps through a gateway which would involve the third component, gateway services. Novell's NetWare Message Handling Service (MHS) is one type of "store-and-forward messaging engine" that many messaging applications use for message delivery.

NetWare MHS is a store-and-forward technology and is a standard in the messaging industry. In fact, in a recent announcement Novell stated that NetWare MHS has more than two million users. NetWare MHS can be used for message delivery in a local area environment or on a wide area network. Its store-and-forward methodology is to real-time as a VCR is to TV, or as an answering machine is to the phone system. To send E-mail, the receiving end does not have to be powered up and logged on to the file server. Your message will wait patiently for the receiving end to come online so the message can be delivered. In real-time communication, you cannot successfully send E-mail unless the receiving end is turned on. Real-time communication forces people into a "telephone tag" environment where creative impulses and candor enhanced by the spontaneity of E-mail can be dampened. The intermediate storage afforded by store-and-forward technology is ideal for messaging, since it affords people the opportunity to communicate independently and quickly. You can create the message when it is convenient and send it on its way without being confronted with connection problems.

Another one of the real strengths of NetWare MHS is that the messages are in a file format that can easily be implemented by application developers. As a consequence, NetWare MHS is widely used to transfer messages between dissimilar products. Because of its transfer capabilities between dissimilar products, NetWare MHS is becoming an essential means of E-mail routing and transfer in UNT's local area environment. It is being used for communication between UNT and TCOM and between dissimilar E-mail products on Novell servers at UNT. It is a welcome addition to the list of supported software.

Using NetWare MHS

At UNT, both WordPerfect Office (WPO) Mail, versions 3.0 and later, and Pegasus Mail, versions 2.2 and later, have the capability to send and receive E-mail using NetWare MHS. Although non-MHS compatible, WPO Mail can access NetWare MHS via a MHS Gateway which translates messages from the WordPerfect file format into a NetWare MHS file format. Pegasus, in addition to sending E-mail server-to-server and via the Internet, can send E-mail using NetWare MHS by user selection or natively if configured to do so by the Network Administrator. At TCOM, QuickMail accesses NetWare MHS through a MHS Gateway and Da Vinci eMail can only operate if NetWare MHS is available.

NetWare MHS's routing and transferring of messages functions much like a postal system. When NetWare MHS receives a message, it reads the address, compares its findings to its routing tables, and transfers the E-mail to the desired location via the path it found in its routing tables. The routing tables are maintained by the NetWare MHS Administrator or Postmaster. At the receiving site, another server's NetWare MHS reads the address of the incoming message and checks its routing tables for the site in the address. If the E-mail message has reached its destined site, then the NetWare MHS places the message in the intended recipient's mailbox. If the E-mail message has not reached the end of its travels, then the NetWare MHS finds the path in its routing tables for the next hop that the message must make and sends it to that location.

UNT ↔ TCOM Via WordPerfect Office Mail

For UNT WPO Mail users, the UNT Novell servers that can send WPO Mail to TCOM via NetWare MHS are:

Electronic Mail

- Academic Affairs Office (AAO)
- College of Arts and Sciences (CAS)
- Computing Center (CC1)
- College of Business Administration (COBAF)
- College of Education (COE)
- Division of Student Affairs (DSA)
- University Libraries (LIBRARY)
- School of Library and Information Sciences (LIS)
- Payroll and Personnel (PON)
- School of Community Service (SCS)
- Purchasing Office, Claims, and Printing Services (PO)
- Physical Plant, Telecommunications, and Police Department (PP0)

If the address is being entered manually, the UNT WPO Mail user sending an E-mail message to a user at TCOM should place on the "To:" line:

MHS:F:user_id@TCOM

where *user_id* is the Novell login ID of the intended recipient at TCOM. If the TCOM *user_id* is selected from the WPO Mail userlist, the above addressing syntax is not entered.

WordPerfect Office Mail Pegasus Mail

WPO Mail users on the above listed servers can send WPO Mail via NetWare MHS to Pegasus users at the Computing Center (CC1) and the Department of Computer Education and Cognitive Systems (CECS).

The WPO Mail address syntax for WPO Mail destined for a Pegasus Mail user on CC1 is:

MHS:F:user_id@CC1MHS

WPO Mail going to a Pegasus user at CECS would have this syntax:

MHS:F:user_id@COEMHS

UNT Pegasus Mail TCOM

For Pegasus Mail users at the Computing Center (CC1) and at the Department of Computer Education and Cognitive Systems (CECS), the address entered on the "To:" line when sending an E-mail message to a user at TCOM should be:

user_id @ TCOM

where *user_id* is the Novell login ID of the intended recipient at TCOM. The spacing in the address is very important. Pegasus Mail is a very robust program and takes the liberty of trying to determine the desired method of transport. If the address has no spaces and does have an @ sign, then Pegasus will try to send the E-mail to the Internet. Conversely, if you are trying to send an Internet message and enters spaces on each side of the @ sign, Pegasus will attempt to send the E-mail message via NetWare MHS.

TCOM UNT

For TCOM users sending an E-mail message to a user at UNT, the address to enter on the "To:" line if the address is being entered manually, should follow the syntax:

user_id @ server

where *user_id* is the Novell login ID of the intended recipient at UNT and server is one of those listed above. The spacing in the address is required. If the address to be used is selected from the system's userlist, the above addressing syntax is not entered.

NetWare MHS Specifications

NetWare MHS is an add-on product for the Novell server and retails for \$495. It requires approximately 5Mb of disk storage on the Novell server and a dedicated workstation with 640K RAM, one diskette drive, and a network communication interface card to operate.

The workstation is used to run the NetWare MHS Connectivity Manager which does the polling, routing, and transferring of messages. A NetWare-Loadable-Module (NLM) for NetWare MHS is available which removes the need for the dedicated workstation. Novell's new Global Messaging Server, which will replace the current version of NetWare MHS, will include MHS in its basic configuration while permitting the addition of other transport systems. The Global Messaging Server due for release in Summer 1992 will be an important part of the Novell NetWare 3.2 Operating System which is due to be released in late 1992.

Version 1.5N of NetWare MHS, currently in use at UNT, permits messages to include up to 64 attachments and to have 64 primary recipients and 63 secondary recipients. Version 1.1N, currently in use at TCOM, will permit only 1 attachment per message. If a user at UNT is sending more than one attachment to a recipient at TCOM, attachments 2 through 64 will not be delivered and no error message will be generated.

NetWare MHS connection to other NetWare MHS sites can be accomplished via network cabling or by modem at 1200, 2400, or 9600 baud. One NetWare MHS site can connect to multiple NetWare MHS sites. One NetWare MHS site can perform all routing functions for multiple NetWare MHS sites in its workgroup.

When the same message is sent to multiple recipients at a given site, only one copy of the message is sent to that site. On delivery, however, the message is copied to each user; users do not share a single copy of the message. ■

WordPerfect Office Mail, Version 3.1 Upgrade

By Mike Murdock, E-Mail Analyst (Murdock@cc1.unt.edu)

The WordPerfect Corporation upgraded its Office product from version 3.01 to version 3.1 on January 31, 1992. Currently, twelve Novell servers have been upgraded at UNT. They are:

- ☐ Academic Affairs Office (AAO)
- ☐ College of Arts and Sciences (CAS)
- ☐ Computing Center (CC1)
- ☐ College of Business Administration (COBAF)
- ☐ College of Education (COE)
- ☐ Division of Student Affairs (DSA)
- ☐ University Libraries (LIBRARY)
- ☐ School of Library and Information Sciences (LIS)
- ☐ Payroll and Personnel (PON)
- ☐ School of Community Service (SCS)
- ☐ Purchasing Office, Claims, and Printing Services (PO)
- ☐ Physical Plant, Telecommunications, and Police Department (PP0)

Virtually all of the enhancements of the upgrade were made to the Mail product. Three new added features that users requested most often are folder capabilities, a spell checker, and a program launch capability.

Folders

WordPerfect Office (WPO) Mail now has the Folders feature which allows you to file messages in various user defined folders in both the user's In and Out boxes. Folders can be defined as either System or Archive folders. System folders keep messages on the network. Archive folders allow you to keep messages in a personal directory either on the your hard drive or on a personal network directory.

Spell Checker

WPO Mail now allows you to operate the WordPerfect (WP) Speller on the message being edited. Before the speller can be used, however, three elements must be in place.

- ❶ First, you must access WPO Mail from the WordPerfect Shell menu system.
- ❷ Second, the Novell directory where the WPO macros are stored must be listed in the setup screen of the Shell. The macro directory can be set by pressing <4> to enter the Shell Setup while the Shell screen is displayed. Next, press <2> for "Options." A list of items will be displayed. Item number 6 is for entering the WPO macros directory. If the macros directory is not listed, press <6> and type

in the path to the WPO macros directory, then press <ENTER>. The Shell Setup screen will then be displayed. Next, press <F7> to exit Setup.

- ❸ To finish the speller setup, the WP word processing program must be on the WP Shell menu as well and it must be accessed by a direct call to the executable program and not through a batch file. To set this item so the WP Speller will work in WPO Mail, select 4 to enter the Shell Setup while the Shell screen is displayed. Next, use the arrow keys to move the highlight bar to the WordPerfect Word Processing entry, then press <1> for Edit. A data entry screen will be displayed and the entry on the line *Program Name:* should be the full path and program name WP.EXE" as in: `F:\APPS\NETWP51\WP.EXE`, for example. The Tab key can be used to move to the Program Name field if the data needs to be changed. Once the correct entry has been made, press <F7> twice to exit the WP Shell Setup. After all of this work, WPO Mail should display **Spell** (Ctrl-F2) on the Mail Message screen as one of the available options when entering text for a mail message. If it is not displayed, an error has been made during the setup.

To use the Spell feature in WPO Mail, type in the mail message and press <Ctrl-F2> to execute the WP Spell macro. A WP Shell macro is then executed. Your message is copied to a buffer, WPO Mail is shelled out to disk, the WP word processor is loaded, the mail message is copied from a buffer into the word processor and the speller is run. After the speller has completed, the corrected message is copied back to a buffer, the word processor is exited, WPO Mail is reloaded from being shelled out to disk, the corrected message is copied into the message screen from the buffer and the process is complete. Operation of the spell checking feature of WPO Mail appears to be

substandard when compared to other WordPerfect products and its use has not been accepted without complaint.

Program Launch

A third feature now available in WPO Mail is a Program Launch, <Alt-F7>, which allows you to use an external editor to create a mail message. You can also use non-WordPerfect Corporation programs to view or print messages. This includes an additional option, Launch Program to Print, which has been added to the Print screen, <Shift-F7>.

Like the Spell Check program, the Program Launch feature must be set up properly before it will operate. To set up the Program Launch, load WPO Mail. At the *In Box/Out Box* screen, press <Shift-F1> for setup. A list of options will appear for customizing the setup. Select item 6 for the Program Launch. Another list of options will be displayed and item 2 should be selected. After selecting item 2, a window will open in the bottom half of the user's screen displaying the WP Shell screen menu items. Select the letter or number that corresponds to the desired external editor.

Next, the setup will ask you to enter *Command Line Parameters*: if there are any. You can enter the name of a batch program at this prompt that will be called instead of the WP Shell screen menu item.

Finally, press <Enter> to complete this entry, then press <Enter> twice more to complete the WPO Mail Program Launch setup. You should be returned to the *In Box/Out Box* screen.

The Program Launch feature will allow you to use an external editor to create mail messages which means you can use the actual WP word processing program instead of the WPO Mail editor, which is definitely lacking in its abilities.

Using the Program Launch feature, like using the Spell Check feature, is not available without significant additional processing. Also, errors using this feature have been reported.

For example, if the external editor is set to the WP word processor executable program and the *Command Line Parameters*: is set to the batch file that is normally used to call the WP word processor, after the message has been edited with the external editor and the word processor returns to the WPO Mail screen, the WPO Mail Message screen displayed and the WP Shell screen will be displayed at the same time. WordPerfect Corporation is aware of this error but no information about its correction has been received.

Additional Enhancements

Additional enhancements made to WPO Mail in version 3.1 are as follows:

- ① **In Box/Out Box** — Previously, WPO Mail was limited to 500 messages per In Box or Out Box. WPO Mail now permits the storage of 9,999 messages; however, only 500 messages and/or folders can be displayed.
Each folder created by the user is counted against the remaining available total. The total number of messages is indicated by the counter in the upper right hand corner of the In Box or Out Box.
- ② **List Users** — The List Users (<F5>,<2>) screen in WPO Mail now has the Search <F2> and Reverse Search <Shift-F2> options which allows you to search for an item by entering a word or string of text. This is also available from List Hosts, Users (<F5>,<6>,<1>).
- ③ **List Hosts** — The List Hosts screen in WPO Mail now includes a Find User <2> option. Find User searches through the user lists under each host and finds each occurrence of a

specified text string and then displays only those hosts which contain that string. When one of those hosts is selected by pressing <ENTER>, the list is positioned on the first occurrence of the text string.

- ④ **Attached Files** — From the Read screen, when you move the cursor to certain attached WordPerfect Corporation files, a message is displayed that tells you what type of file is currently highlighted.

Files that display the file type are: WordPerfect macros, Editor macros, Shell macros, DataPerfect macros, PlanPerfect macros, PlanPerfect spreadsheets, Calendar files, DrawPerfect files, and DOS executable files (e.g., DUCK.WPG displays "DrawPerfect Graphics File").

- ⑤ **Startup Option** — WPO Mail now supports the /ph-path and /pu-path startup options, where /ph is the path to the user's host and /pu is the path to the USERID.FIL, file. If either option is specified without the other, WPO Mail uses the same setting for both. If neither option is specified, it searches for the USERID.FIL file and uses its path.
- ⑥ **Startup Option** — WPO Mail now supports the /sf startup option. The /sf-filename option starts WPO Mail on the Send screen with the specified file attached. The user can then fill in the remaining fields and send the message/file. When the user exits (or cancels from) the Send screen, the user is exited from WPO Mail.
- ⑦ **Encryption** — WPO Mail now encrypts the entire message file in all mail messages.
- ⑧ **Gateway support** — Previously, WPO Mail failed to deliver messages from a gateway if the sender's User-ID was over 32 bytes (approximately 32 characters). WPO Mail now delivers messages from a gateway if the sender's User-ID is over 32 bytes.

WordPerfect Office version 3.1 upgrade and pricing information is available through the Hotline at 565-2316. Also, WordPerfect Corporation has not finished growing and developing its E-Mail offerings so managers of Network systems may want to wait until WordPerfect releases its next version which will probably be a significant change from the current 3.01 and 3.1 versions. ■

NT Gopher: Academic Information Service

by Billy Barron, VAX/UNIX System Manager (billy@unt.edu) & Mark Thacker, CCI Manager (thacker@ccl.unt.edu)

The University of Minnesota has written a piece of CampusWide Information System (CWIS) software called Gopher. Academic Computing has installed Gopher here at UNT. However, we are using it not as a CWIS, but as a front-end to many Wide Area Network resources and as a test computing document delivery system. If the project succeeds, then we will expand the system. However, if the project is a failure, then it may be removed.

One note about the structure of Gopher: everything is organized as a hierarchical menu structure with *folders* containing files and other folders. A *file* could be a phone book or a program that searches a list of documents for key phrases. Locations of items are described by the *path* of folders to follow to reach the item. For example, if item Z were inside folder Y which was inside folder X, its path is described as X/Y/Z.

You first choose folder X from the main menu, then choose folder Y. Item Z is now visible.

What You Get With Gopher

The NT Gopher system provides:

- ① **Access to Academic Computing Documentation.** It can be found in "Online Databases & Docs/Computing/UNT Academic Computing Documentation." Other computing information can be found in this area also.
- ② **Access to Internet resources.** These resources are scattered all around NT Gopher. All information is organized by subject and not on the basis of its location.
- ③ **Access to Electronic Journals, Newsletters, and Newspapers.** Some examples are the UNT Network Managers' newsletter NetMan, the Daily Texan, NetMonth, and Health Info-Com Network Newsletter. These and others can be found in "Newsletters & Newspapers."
- ④ **Academic Information Databases.** Topics include Education, English, Government, Journalism, Music, Astronomy, Biology, Chemistry, Environmental Science, Geography, Mathematics, Medicine, Computer Science, and Philosophy. All of these can be found in the "Online Databases & Docs" area.
- ⑤ **National Science Foundation Grant Information.** Can be found in the "Online Databases & Docs/Science/NSF" section.
- ⑥ **Phone books and E-mail directories** can be found under the "Phone Books" section. A variety of universities and colleges provide on-line staff/student/faculty phone books.
- ⑦ **Weather forecasts** can be found under the "Travel & Weather/Weather Forecasts" section.
- ⑧ **Travel and Foreign country information** is available in the "Travel & Weather" section.
- ⑨ **Access to CWISes at other universities.** See "Other Campus Wide Information Systems"

- ⑩ **Access to remote libraries** under "Libraries."

I know you are thinking "Wow! That's a lot of information to be maintaining. How does Academic Computing Services have time to do this?" Well, the answer is that we don't have the time, but one of the beauties of the Gopher system is that it can access remote data over the Internet transparently. Much of this information is available via WAIS, other Gophers, TELNET, and FTP. Gopher has the ability to display the remote data transparently to the user. This way a piece of information need only be maintained in one location on the Internet. The downside is that access to remote data is slower and if a part of the Internet is down, parts of NT Gopher will be down. However, the benefits greatly outweigh the disadvantages.

Accessing Gopher

Initially, we will make Gopher available to UNT users in three different ways:

- ① Any Solbourne user can run it by typing **gopher** at the shell prompt.
- ② Anybody can **telnet** to **gopher.unt.edu** or call 900 on the Sytek LAN and login as **gopher**. This public access client has certain features disabled, such as saving files and printing.
- ③ The PC and Macintosh client are available in the ACS General Access Lab (ISB 110). The PC and Macintosh clients are easier to use and more powerful than the terminal-based client. To run the PC client, just type **gopher**. To run the Macintosh, double click on the **Internet Gopher** icon.

If you have any problems or questions regarding NT Gopher, please send E-mail to gopher@unt.edu ■

How to Find Out Someone's E-mail Address Without Using the Telephone

By Billy Barron, VAX/UNIX System Manager (billy@unt.edu)

The simplest way to find out someone's E-mail address is to just call them. However, this solution seems silly because one of the reasons you want to send E-mail is to avoid telephone tag. This article focuses on finding out users addresses across the Wide Area Networks. Most of this article applies to host users and does not apply to Pegasus mail and WordPerfect Office.

- ❑ **Business Cards:** Many people nowadays have their E-mail address listed right on their business cards. So if you have the other person's card, take a look at it.
- ❑ **Published Papers:** Many people include their E-mail address on publications or papers. If you have anything they wrote, look at it for the address.
- ❑ **Online University Phone Books:** In the NT Gopher system (see the article on page 8), there is a section called Phone Books which contains the electronic books of many universities, including Texas A&M and UT Austin. Most of these phone books also list E-mail addresses.
- ❑ **NetFind:** NetFind is available on the Solbourne and can find Internet addresses for many Internet users automatically. NetFind will only find Internet users not BITNET, UUCP, or FidoNet users. See the adjacent article on this page for more information.
- ❑ **USENET Postings Database:** In the NT Gopher system, under the Phone Books category, there is an item called "Email Address based on USENET Posts." This will search a database of recent posters to USENET. The downside is if they are not a USENET user, they will not show up.
- ❑ **Knowbot Information Service:** Can be used to search several databases including the WHOIS database described below, MCIMail's directory service, and NYSERNet (New York) X.500 White Pages Pilot Project. It is accessible via `telnet nri.reston.va.us 185`.
- ❑ **WHOIS Database:** The Network Information Center for the Data Defense Network has a database of registered network users. Anybody can register (see the item "How to Get Added to the WHOIS Database" in Gopher), but very few people do. WHOIS is available on both the VAX and Solbourne.
- ❑ **Australian White Pages:** Australia runs a Phone Book service. It can be accessed via `telnet whitepages.adelaide.edu.au` — log in as `fred` with the password `fred`.
- ❑ **PSI White Pages:** This white pages service has information about a few companies and universities. It can be accessed via `telnet 192.33.4.21`.
- ❑ **PARADISE information service:** PARADISE has listings for several hundred organizations. It can be accessed via `telnet hypatia.umdc.umu.se` — log in as `de`.
- ❑ **American Philosophical Association:** They have a listing of members with E-mail addresses available over the Internet. It can be accessed via `telnet atl.calstate.edu` — log in as `apa`.
- ❑ **Oceanographers:** A listing is available on the OCEAN Information Center. It can be accessed via `telnet delocn.udel.edu` — log in as `INFO`.

- ❑ **WorldWideWeb:** It contains directories for CERN, ICTP, NIKHEF, and some other European research institutes. To access, type `telnet info.cern.ch` from a UNT host computer or your PC if you have telnet capability.
- ❑ **CWIS:** CampusWide Information Systems at various Universities are available. Look in Gopher in the Other Campuswide Information Systems menu or in the CWIS part of HYTELNET. You will have to connect and then search. ■

NetFind

By Billy Barron, VAX/UNIX System Manager (billy@unt.edu)

NetFind is a tool installed on the Solbourne for finding Internet E-mail addresses. It was developed by the University of Colorado and uses a variety of techniques involving FIN-GER, Domain Name Service, and SMTP to attempt to find a user's E-mail address.

To use it, the command format is:
netfind name key key

The name field should be either the first, last, or log-in name of the person. The key fields describe where the person works (name of institution, city, state, country, or type of institution). For example, let's say that we are looking for David Lippke at the University of Texas at Dallas. We would type:
netfind lippke university texas dallas

NetFind will attempt to find his E-mail address and if found, will display it. At times, there may be too many sites that meet your search criteria and NetFind will return a list of domains to choose from. In that case, just pick the domains that are the most likely.

NetFind is just one of many tools to hunt for E-mail addresses (see adjacent article). It is sometimes slow and has some bugs in it. For more information, type `man netfind` on the Solbourne. ■

Electronic Mail on VM/CMS — Understanding E-mail Addressing

By Mike Friedman, University of California at Berkeley

This is an edited version of an article that appeared in Berkeley Computing (November-December 1991, Volume 1, Number 1, pp. 12-15).

The purpose of this article is to discuss E-mail addresses: how to read, understand, and specify them. It is, of course, important to know how to address your outgoing mail. But it's also useful to be able to decipher addresses you didn't create, in order to help discover the cause of mail delivery problems. Only general concepts are presented here, but this should provide at least a starting point in an area acknowledged to be unfortunately arcane (especially considering the diverse population of electronic mail users).

A Note About E-mail Address Syntax and Your CMS Environment

Address formats generally use the @ character. If you find that you are unable to enter this character without its being swallowed up by the system, you can fix this by making one change to your CMS environment. Place the following command in your PROFILE EXEC, and you won't have to worry about it again:

```
cp terminal chardel off
```

This suppresses the system's interpretation of the @ as a special line editing character (which is not very useful in CMS Display Mode anyway).

An alternative is to substitute at for @ when you type E-mail addresses. However, keep in mind that this is a convention on CMS that probably won't work on other systems you may be using.

BITNET

BITNET (Because IT's Time Network) was established in the early 1980s as a means of connecting IBM mainframes using standard IBM software and ordinary telephone lines. It has evolved since then, but still maintains much of its original logical structure. Although many BITNET sites now run non-IBM systems, they use software that understands and implements the IBM protocols on which the network is based.

Individual computer systems that are registered on BITNET are called *nodes*. A BITNET node name must be a single, unqualified (containing no dots) string of at most eight characters. A person at a BITNET node would have an E-mail address of the form

userid@nodename

where *userid* is the person's logon or mailbox name and *nodename* is the BITNET node name. Only these two components are used to identify the destination of a mail parcel within BITNET.

For example, UNT's VM/CMS system has the BITNET node name of **UNTVM1**. If your login account on this system is *myname*, then your BITNET address is:

myname@UNTVM1

Often, you will see the form:

userid@nodename.BITNET

The qualified name to the right of the @ should not be confused with an Internet address. Rather, this is a special convention that is used when mail must move between BITNET and the Internet, and is discussed below.

The Internet

The Internet is a collection of mutually connected networks supporting the same routing protocols, called TCP/IP (Transmission Control Protocol/Internet Protocol). In this environment, individual computer systems are usually known as *hosts*, which are grouped into *domains*. This hierarchical structure is solely administrative; its function is to facilitate the maintenance of a consistent addressing scheme. No physical or geographical significance is necessarily implied by the domain structure of an address.

An Internet address usually looks like this:

userid@hostname.subdomain.domain

For example, UNT's VM/CMS system has the Internet address of:

vm.acs.unt.edu

The hostname portion of the address is **vm**, which refers to the individual computer system. This host is registered in the subdomains **acs** and **unt**, which are administered by a local campus authority. The **acs** and **unt** subdomains in turn are registered with an Internet central authority that is responsible for the **edu** high-level domain. (Domain names are not case sensitive; examples appear here as they are conventionally used, but upper- and lowercase are interchangeable.)

A UNT VM/CMS user with the User-ID myname would have an Internet address of

myname@vm.acs.unt.edu

Gateways

Because BITNET and the Internet use different routing protocols, certain BITNET and Internet hosts exist to get mail from one network environment to the other. These systems have both a BITNET and an Internet address, and are known as gateways.

One use of gateways is to send mail to networks that are not part of either BITNET or Internet. Some commercial networks have established gateways to allow their internal users to be reached from the Internet. An example is MCI Mail. There is an Internet host, whose address is:

mcimail.com

which will forward mail to the MCI network. As an Internet user, you would mail to an MCI customer as follows:

- Determine the MCI user's account name, MCI ID, or full user name.
- Use one of the following forms of address:

accountname@mcimail.com
(e.g., **JSmith@mcimail.com**)

or:

mci_id@mcimail.com
(e.g., **4280345@mcimail.com**)

or:

full_user_name@mcimail.com
(e.g., **John_Smith@mcimail.com**)

The person on the MCI end will have corresponding procedures for mailing to your Internet address.

Be aware that, whenever you mail to someone on a commercial network, your correspondent may incur charges. This, of course, depends on the policies of the other network.

Complex Addresses

You may see addresses in your mail headers that look like this (all on one line):

user%nodename@hostname.
subdomain.domain

or

user%xxx.yyy.zzz@hostname.
subdomain.domain

This is a format that shows up on the Internet and here is how it should be interpreted:

The host name to the right of the @ represents an Internet-registered destination. Everything to the left of the @ is considered a *user*, from the point of view of Internet routing. When it receives the mail, the Internet host has the responsibility of converting the rightmost % to an @ and delivering the parcel to the resulting address by whatever means are available. This mechanism is intended for use in reaching hosts that

are not Internet-registered, via a host that is registered. However, an arbitrary Internet host may not have this forwarding capability, so you are strongly discouraged from using such addresses in your own mail.

This format is not an Internet standard and its use often results in unintended routing consequences. A site that wishes to be reachable from the Internet is encouraged to register a domain address, so it may participate fully in the Internet routing process. Or, as in the case of MCI Mail, it should register as an Internet gateway, which will forward mail to it.

However, this address form continues to appear in mail headers because it is generated by the mail-forwarding software that runs on gateways. Let's look at an example.

Suppose someone at BITNET node YALEVM sends you a piece of mail via the Internet. The parcel would leave YALEVM, pass through a Yale gateway that sends BITNET traffic onto the Internet, arrive at **vm.acs.unt.edu** and be delivered to your VM/CMS reader. The return address in the header may contain the following (all on one line):

From:
yaleuser%YALEVM.BITNET@
yalevm.ycc.yale.edu

The gateway mail-forwarding software at Yale took the original return address of **yaleuser@YALEVM** and turned it into the above. The gateway has assumed that because you are on the Internet, you may be able to reply only to Internet addresses. So, it has given you a return address that is routed through Yale's Internet/BITNET gateway, where your reply would be forwarded to Yale's BITNET address.

Just remember that the % notation is mostly for use by gateways and should not be relied upon by individuals who are originating mail. It will continue to

be used, no doubt, as long as there are networks (like BITNET) having address spaces incompatible with the Internet's. But you, as an ordinary sender of mail, should leave the details of internetwork routing to the gateways.

Summary

With the increasing interconnectivity of computer mail networks around the world has come greater complexity in addressing. This is a developing technology, and it is hoped that more standard and user-friendly mechanisms eventually will become available.

Meanwhile, at UNT, if you have a problem with a particular piece of E-mail that involves deliverability or addressability, you may contact Academic Computing Services for assistance at 817-565-2324 (ISB 119). ■

CREN Joins the Internet Society

Reprinted (in edited form) from NetMonth (June 1992, Issue 40)

CREN decided, at its February Board meeting, to join the new Internet Society as a corporate member, effective July 1 (the new CREN fiscal year). This is in recognition of the important role that the Internet Society is expected to have in the support and governance of the Internet as an international network, and in the broader "Matrix" of interconnected international networks, including BITNET. Both individuals and organizations may join the Internet Society, thereby encouraging and supporting its activities.

Information on the Internet Society is available in the November/December 1991 issue of *Benchmarks* (Vol. 12, No. 9, p. 3) and on LISTSERV@BITNIC in the file ISOC ANNOUNCE. ■

The Network Connection

By Dr. Philip Baczewski, Acting Director of Academic Computing,
BITNET INFOREP (AC12@UNT.EDU)

This column is a continuing feature of Benchmarks intended to present news and information on various aspects of wide area networks.

Knowing the Rules

Many of us have come to rely on Wide Area Networks to support various aspects of our scholarship. The use of BITNET and NSFNET are now taken for granted by many at colleges and universities. Periodically, however, it is helpful to review the usage guidelines of these networks so that these resources that we take so for granted are not intentionally or unintentionally subjected to abuses of the privilege of access. At UNT it is also University policy that those accessing Wide Area Networks shall abide by the policies of those networks.¹ It is very important, then, that if you use BITNET or NSFNET, you read and maintain a handy copy of their policies.

We last published the CREN usage guidelines in the November/December 1990 issue of *Benchmarks*.² They are repeated below to familiarize you with them or refresh your memory of them. Also included below are the NSFNET usage guidelines.

Corporation for Research and Educational Networking Acceptable Use Policy³

CREN networks are for the use of persons legitimately affiliated with CREN Member or Affiliate organizations, to facilitate the exchange of information consistent with the academic, educational and research purposes of its members. All individuals affiliated with CREN Member or Affiliate organizations are responsible for seeing that their communities are aware of these guidelines, and that the guidelines are followed, both in letter and in spirit.

CREN networks are, at the discretion of the institutions involved, open to use by students enrolled at participating CREN Member or Affiliate educational institutions.

Use of CREN networks shall:

- Be consistent with the purposes and goals of the networks.
- Avoid interfering with the work of other users of the networks.

¹ University Of North Texas Policy Manual, Classification 3.6, Section 4.8.d.

² "The BITNET Connection," *Benchmarks*, Vol. 11, No. 8, November/December 1991, pp. 17-18.

³ The following is available from LISTSERV@BITNIC as the file CREN NET_USE. This file is maintained by the CREN Information Center and was last updated October 3, 1990. For more information contact the Corporation for Research and Educational Networking, Suite 600, 1112 Sixteenth Street, NW, Washington, DC 20036 Phone: (202) 872-4200.

- Avoid disrupting the network host systems (nodes).
- Avoid disrupting network services.

Acceptable Use of the Networks

The following examples may help users of the networks apply these principles in particular cases.

- Messages that are likely to result in the loss of recipients' work or systems are prohibited.
- CREN networks are not to be used for commercial purposes, such as marketing, reselling bandwidth, or business transactions between commercial organizations.
- Advertising is forbidden. Discussion of a product's relative advantages and disadvantages by users of the product is encouraged. Vendors may respond to questions about their products as long as the responses are not in the nature of advertising.
- CREN networks may be used for the provision of services which support the needs and purposes of the CREN networks, and for which a charge is made, if the network is an optional mechanism for provision of this service for which no additional charge is made, and as long as the use of the service is consistent with the bandwidth of the network and the forwarding hosts. Providers of such information may be non-profit or for-profit organizations.
- Any communication which violates applicable laws and regulations is not allowed.**

** In particular, messages and data sent to destinations outside the U.S. must satisfy the Department of Commerce regulations (either be within the GTDA guidelines for information which may be generally transmitted or have the required license).

Please see CREN on page 14

List of the Month

Each month we will highlight one BITNET, Internet, or USENET Special Interest Group (SIG) mailing list. This month's list...

This month's list may help the novice or experienced BITNET and Internet user. The following explanation given by the list's owner, Jeff Linder (BITNET: V5057U@TEMPLEVM Internet: jeff@monet.ocis.temple.edu), provides a comprehensive explanation of the list's purpose and use.

HELP-NET@TEMPLEVM

Help-Net is a discussion list for the purposes of solving user problems with utilities and software related to the Internet and BITNET networks. In addition, LISTSERV at TEMPLEVM maintains a set of low-level help files intended to help the beginning user acclimatize to the network systems.

Both novice and experienced users are encouraged to join the discussion list, either to ask questions, or to answer them. Questions on almost any network topic are encouraged, however there are a few ground rules we ask that you observe.

1. Please do not post "where can I find this game, or that specific gif file," etc. There are several lists that deal specifically with those topics. The question, "Where would I find a list that could tell me where to get ... ?" on the other hand is quite acceptable.
2. Please do not post any messages that relate to the illegal traffic of copyrighted material.
3. Feel free to redistribute the help files freely. We do ask that you identify the source of any materials.
4. We gratefully accept both topics for additional Help sheets, and submissions to be placed on the server. For more information about submitting, get the file SUBMIT INFO from the server. See below for instructions.

Signing on to the list: Send the following command to LISTSERV at TEMPLEVM, as either an interactive message or the body of a mail message: SUB HELP-NET *Your Name*

Getting a file from the list: Send the following command to LISTSERV at TEMPLEVM: GET HELP-NET FILELIST

Choose which files you want and send a get command for each of those files. If you have a problem, ask the list. It's what we are here for. Please note that you must be a list subscriber to access files.

Posting a message on the list: Send your mail message to HELP-NET at TEMPLEVM. Your mail will be forwarded to all list members, and you will be replied to. ■

CREN continued from page 13

Users of CREN networks are expected to be responsible in their use:

- "Chain letters," "broadcasting" messages to lists or individuals, and other types of use which would cause congestion of the networks or otherwise interfere with the work of others are not allowed.
- BITNET files will be limited to sizes determined and reviewed periodically. (Note: The current limit is 300,000 bytes per file transmitted.)

CREN Members or Affiliates are expected to take reasonable measures (given the constraints of technology and management) to ensure that traffic using gateways between CREN networks and other networks conforms to these guidelines.

Final authority for CREN acceptable use policies lies with the CREN Board. It is the responsibility of member representatives to contact the CREN Board, in writing, regarding questions of interpretation. Until such issues are resolved, questionable use should be considered "not acceptable."

The NSFNET Backbone Services Acceptable Use Policy⁴

GENERAL PRINCIPLE:

- (1) NSFNET Backbone services are provided to support open research and education in and among U.S. research and instructional institutions, plus research arms of for-profit firms when engaged in open scholarly communication and research. Use for other purposes is not acceptable.
- (2) Communication with foreign researchers and educators in connection with research or instruction, as long as any network that the foreign

⁴ This NSFNET Acceptable Use Policy is also available via anonymous ftp to [nis.nsf.net](ftp://nis.nsf.net). Retrieve the file `nsfnet.txt` in the directory `acceptable.use` policies.

SPECIFICALLY ACCEPTABLE USES:

- user employs for such communication provides reciprocal access to U.S. researchers and educators.
- (3) Communication and exchange for professional development, to maintain currency, or to debate issues in a field or subfield of knowledge.
 - (4) Use for disciplinary-society, university-association, government-advisory, or standards activities related to the user's research and instructional activities.
 - (5) Use in applying for or administering grants or contracts for research or instruction, but not for other fundraising or public relations activities.
 - (6) Any other administrative communications or activities in direct support of research and instruction.
 - (7) Announcements of new products or services for use in research or instruction, but no advertising of any kind.
 - (8) Any traffic originating from a network of another member agency of the Federal Networking Council if the traffic meets the acceptable use policy of that agency.
 - (9) Communication incidental to otherwise acceptable use, except for illegal or specifically unacceptable use.

UNACCEPTABLE USES:

- (10) Use for for-profit activities (consulting for pay, sales or administration of campus stores, sale of tickets to sports events, and so on) or use by for-profit institutions unless covered by the General Principle or as a specifically acceptable use.
- (11) Extensive use for private or personal business.

This statement applies to use of the NSFNET Backbone only. NSF expects that connecting networks will formulate their own use policies. The NSF Division of Networking and Communications Research and Infrastructure will resolve any questions about this policy or its interpretation. ■

The Return of *NetMonth*

The BITNET Electronic Magazine, *NetMonth*, has resumed a regular publication schedule with Dr. Philip Baczewski, Acting Director of Computing Services, assuming editorship. As with many BITNET endeavors, *NetMonth* has always been a volunteer effort and its production and distribution in the past can be credited to Chris Condon. When he was a student at Yale, Chris almost single-handedly wrote and edited *NetMonth*. Once Chris took a job as a computing professional in Manhattan, it was harder for him to get access to BITNET and the resources associated with it and so *NetMonth* was produced much more infrequently.

Conversations between Baczewski and BITNET staff members at the 1992 EDUCOM conference, led to a proposal to change editorship, and with Chris Condon's approval, the transfer was made. *NetMonth* maintains its past format of providing news, information, and editorials concerning the use of the BITNET wide area network and related topics. May 1992 saw the first issue produced under Baczewski's guidance.

To subscribe to *NetMonth*, send the command:

SUBSCRIBE NETMONTH *your name*

to LISTSERV@MARIST.BITNET as the first line of a mail message. You can unsubscribe by sending the command **UNSUB NETMONTH**. The archives of *NetMonth* are available on LISTSERV@MARIST or LISTSERV@BITNIC. Send the command **GET NETMONTH FILELIST** for a complete list of holdings. Archives are also available via anonymous FTP on [FTP.UNT.EDU](ftp://FTP.UNT.EDU) in the `pub/netmonth` directory. ■

GlasNet™ — A New Commonwealth Computer Network for Information Interchange

By David Caulkins, GlasNet USA (dcaulkins@igc.org)

A new computer network called *GlasNet™* has been installed in Moscow by The International Foundation (Washington, Munich, Sofia) and The Institute for Global Communications (San Francisco). *GlasNet™* is the first non-profit, non-governmental telecommunications network to be established in the Commonwealth of Independent States (ex-USSR).

The purpose of *GlasNet™* is to offer easy and inexpensive information exchange between diverse groups within the Commonwealth, including scientists, educators, cultural groups, journalists, environmentalists, computer enthusiasts, and so forth. It will also enable these groups to correspond electronically with their counterparts in the Americas, Europe, and Asia. *GlasNet™* is intended to serve the communication needs of pro bono groups in the Commonwealth who could not otherwise afford modern communication services. Charges to non-commercial *GlasNet™* users in the Commonwealth will be entirely in rubles, and kept as low as possible while maintaining good system services.

GlasNet™ is a member of the Association for Progressive Communications (APC), a global network-of-networks with host computers in Australia (Pegasus), Brazil (AlterNex), Canada (Web), Great Britain (GreenNet), Nicaragua (Nicarao), Sweden (FredNaet), and the USA (PeaceNet, EcoNet). The first *GlasNet™* host computer is a 386 computer running UNIX; it uses the standard APC electronic mail, conferencing, and networking software. The user interface of this software is identical to that which has been used by Sovam Teleport for the last two years. The initial *GlasNet™* hardware configuration will support 5,000 user accounts; of these 7 to 30 can be on line simultaneously, depending on the number of available telephone lines. *GlasNet™* was installed in Moscow in March of 1991 and has been operating officially since May 30, 1991.

GlasNet™ is negotiating with organizations in Dnepropetrovsk, Kiev, Saint Petersburg, and Zelenograd to set up *GlasNet™* associate host computer systems in these cities.

Collaboration among scientists, business people, and other specialists in the USA has been facilitated in recent years through the use of computer-based electronic mail and conferencing capabilities, allowing people in different parts of the country to work on joint projects, access data banks and information in computers all across the country, and electronically publish new work. These powerful capabilities are now becoming available to the general public, the non-profit community in particular, through such services as PeaceNet and EcoNet.

It is the goal of *GlasNet™* to provide similar performance-enhancing services to the fast-emerging independent sector in the Commonwealth, offering Soviet users easy access to friends, colleagues, and potential associates in the Commonwealth and abroad.

GlasNet™ Services

The initial services available to *GlasNet™* users will include:

- **Electronic Mail** — *GlasNet™* subscribers will be able to exchange messages with users on *GlasNet™*, other users within APC, or with users belonging to many other networks through APC "gateways."

Networks accessible through APC gateways include:

- Applelink
- ARPANET
- AT&T LandMail
- AT&T MAIL
- BITNET
- BIX
- BOLNET
- CARINET
- CGNET
- CIGnet
- COMLINK
- COMPUSERVE
- CONNECT
- CSNet
- DASNET
- DELPHI
- DIALCOM
- EasyLink
- ECUANEX
- EIES
- ENVOY 100
- FIDONET
- GALAXY
- GeoNet
- GTE
- HandsNet
- HURACAN
- IMC
- INET
- Internet
- JANET
- MCI MAIL
- MicroLink
- NASA

Electronic Mail

- NWI
- PANDORA
- PINET
- Portal
- PsychNet
- ScienceNet
- SOURCE
- TCN
- Telecom Gold
- Telemail
- THE META NETWORK
- TWICS
- Tymnet/Ontyme
- UNDP;UNDRO;UNINET
- UNISON
- UUCP Mail Net
- WELL
- WORKNET
- OMNET
- Usenet

Electronic mail (E-mail) overcomes the cost and problems of telephone use. An electronic mail message is composed at the user's convenience, then quickly sent by the GlasNet™ computer to its destination in the addressee's host computer mailbox, which may be in Moscow or halfway around the world. When the person to whom it is sent logs in to his or her local network host computer, the message is waiting. Transmission is immediate, and there is no need for both parties to be present simultaneously. Costs are less than long distance telephone calls or those of air parcel services.

- **FAX And Telex Service** —GlasNet™ will provide its users with the ability to send messages to FAX machines, and to send or receive messages from Telex machines.
- **Electronic Conferencing** —An electronic conference is a written conversation with other users; a conference is created to discuss a

particular topic or to facilitate communication between people working on a joint project. GlasNet™ users will be able to start their own conferences on topics of interest, or will be able to participate in on-going conferences on other APC networks.

GlasNet™ has office space in and works closely with the Bank of Ideas of the Commonwealth at their offices on Ulitsa Yaroslavskaya.

The Russian staff of GlasNet™ opposed the the August 19-23, 1991 coup and courageously kept GlasNet™ operating during it. GlasNet™ was used to keep GlasNet™ users informed about the fight against the coup, and to pass information about it back to the West.

- **GlasMail** — In November 1991 GlasNet™ began offering a new service — GlasMail™. This allows communication between people who have no E-mail or other equipment; people in the USA can send letters, telegrams, or FAXes quickly and reliably to anyone in the Commonwealth. Prices range from \$6 to \$20 per message, depending on the speed and cost of delivery in the Commonwealth. Delivery is 3 days or less from receipt of a message in the USA to its delivery in the Commonwealth.

Further Information

For further information on GlasNet™ or GlasMail™, please contact:

- Anatoly Voronov, Executive Director E-mail: avoronov@glas.apc.org
 - Alexander Zaytsev, Technical Director E-mail: alexz@glas.apc.org
 - Anatoly Yeroshin, User Support Director E-mail: toll@glas.apc.org
- GlasNet™
Ulitsa Yaroslavskaya 8
Korpus 3 Room 111
129164 Moscow
Voice: 217-6173, 217-6182
Data: 217-6170, 217-6171, 217-

6172, 217-6174, 217-6180, 217-6181, 217-6183

In the USA:

- David Caulkins
GlasNet USA
437 Mundel Way
Los Altos, CA 94022
Voice: 415-948-5753
Fax: 415-948-1474
E-mail: dcaulkins@igc.org (from Internet in the USA) dcaulkins (from PeaceNet/EcoNet in the USA)

People in the USA who wish to access GlasNet™ and do not have an account on one of the APC-connected gateway networks listed above should get an account on one of the IGC networks: PeaceNet or EcoNet. For information about these networks, contact:

IGC 18 de Boom
San Francisco, CA 94107
Voice: (415) 442-0220
Fax: (415) 546-1794
E-mail: igcoffice@igc.org

The Cost of GlasNet™

Because GlasNet™ charges users in the Commonwealth in rubles, and because we have some communications costs we must pay in dollars, there is a charge to US individuals and groups who communicate with GlasNet™. These costs vary, but at the moment we estimate them to be about \$0.50 per message.

It is possible to sponsor a GlasNet™ account for colleagues in the Commonwealth by making dollar payments to IGC in the USA; accounts sponsored in this way are effectively free to users in the Commonwealth. Costs as of January 10, 1992 are \$60 setup (manuals, helping the Commonwealth colleague get hooked up and on line, etc.) and \$25 per month. Contact IGC or Dave Caulkins for more information about this (see above for addresses). ■

Senior Director of Academic Computing Services Hired

Dr. Paul Gandel has been hired, effective July 13, as the Senior Director of Academic Computing Services. Dr. Gandel holds a Ph.D. in Information Science from Syracuse University. He comes to us from AT&T Bell Laboratories, Holmdel, New Jersey. Dr. Gandel's extensive computing and information technology experience — including significant roles in computer, library and media services — is sure to be an asset to UNT.

Dr. Philip Baczewski, current Acting Director of Academic Computing Services, will become the new Assistant Director of Academic Computing Services when Dr. Gandel joins the staff. ■

SAS 6.07 Installed on Academic CMS and OS/MVS

By Panu Sittiwong, Research and Statistical Support Manager (PANU@UNT.EDU)

SAS version 6.07 — which has been proclaimed by SAS Institute as the best SAS software ever shipped — has been installed on the academic CMS and OS/MVS operating systems and is ready to use. This version will be the default version by the beginning of the fall semester.

SAS version 6.07 is a release that will solve some of the SAS 6.06 problems.

Please see SAS on page 18

MUSIC to CMS Conversion Project Approved

By Dr. Philip Baczewski, Acting Director of Academic Computing (AC12@UNT.EDU)

At their meeting on May 7, the UNT Information Resources Steering Committee approved the concept of moving from MUSIC to CMS as the primary interactive academic mainframe operating system and the eventual deinstallation of MUSIC from the academic mainframe. This project was proposed some time ago. It now has official sanction from the University administration.

This Proposal in Historical Perspective

On June 12, 1990, the University Computing Council (currently the Information Resources Council) approved a motion to accept, pending clarification of funding issues, the recommendation by the MUSIC/CMS advisory committee to replace MUSIC with CMS as the primary interactive academic mainframe operating system. At the same time, the UCC agreed that the recommendation be forwarded to the Computing (currently Information Resources) Steering Committee. The Steering Committee never had the opportunity to officially consider the MUSIC to CMS replacement proposal, however. The recommendation of the MUSIC/CMS Advisory Committee was again brought before the Information Resources Council at their April meeting, and the IRC forwarded the issue to the Information Resources Steering Committee with the result as mentioned above.

While the development of the CMS system has proceeded to the point of offering a complete CMS production system, there has previously been no official sanction of dropping support for the MUSIC/SP environment. Because of the increased need for support of CMS, the level of Academic Computing staff support for MUSIC has indeed decreased; however, without the sanction to announce an end to MUSIC support, it was not possible to encourage or mandate the transition to other computing platforms or to reach the point where deinstalling MUSIC and recovering the resources currently devoted to it became a practical reality.

A great deal of the work involved in the MUSIC to CMS replacement project has already been accomplished. One of the largest user groups of the Academic mainframe system, the Business Computer Information Systems department of the College of Business, has already converted the majority of their instruction and research activity from MUSIC to CMS. A number of researchers from other areas of the University have also adopted CMS as their primary mainframe platform. (Of the faculty, staff, or individual student User-IDs with interactive access to the academic mainframe system, 68% have CMS access. At the time of the original recommendation, only 15% of MUSIC users also had CMS access. Today, 56% of MUSIC users also have CMS access.) In supporting the development of CMS, a number of the expenditures outlined in the original MUSIC to CMS replacement plan have been accomplished as a part of the normal Academic Computing budget and acquisition cycles in the intervening years.

A Transition Timetable for Discontinuing Support for MUSIC/SP

Currently, MUSIC is scheduled to be removed from the academic mainframe system in September of 1993. This allows one year to complete the transition from MUSIC to CMS. Based upon a one-year period, the following is a proposed timetable for managing the transition from MUSIC to an alternative Academic Computing host system. During this time period, at least one part-time Academic Computing Services staff member will be devoted to the task of training new CMS users and all ACS mainframe user services staff will be available for consultation. Regular classes will be held so that MUSIC users can be introduced to CMS or an alternative platform, and classes can also be scheduled upon request. The following plan is proposed to correspond with the academic calendar.

Fall Semester

- 1 Faculty and individual students will be discouraged from applying for new MUSIC User-IDs, and encouraged to use CMS or an alternative Academic Computing platform instead.
- 2 During the semester, faculty and individual MUSIC users will be encouraged to apply for an ID on an alternative Academic Computing platform and to start using it as their primary operating system. Classes will be held specifically to introduce longtime MUSIC users to alternative platforms.
- 3 Faculty members will be encouraged to prepare for using CMS or an alternative platform for class accounts in the spring semester.
- 4 Academic Computing Services staff will be available to hold special introductory CMS short courses for the classes whose professors request CMS for their classroom ID codes.

Spring Semester

- 1 No new MUSIC User-IDs will be issued to faculty or individual users except with special approval by Academic Computing Services management. Use of MUSIC will be discouraged in favor of other Academic Computing platforms.
- 2 Academic Computing Services staff will be available to hold special introductory CMS short courses for the classes whose professors request CMS for their classroom User-IDs.
- 3 During the semester, faculty and individual MUSIC users will be encouraged to apply for a User-ID on an alternative Academic Computing platform and to start using it as their primary operating system. Classes will be held specifically to introduce longtime MUSIC users to alternative platforms.

Summer Terms

- 1 No new MUSIC User-IDs will be issued to faculty or individual users and no MUSIC class User-IDs will be issued except with special approval by Academic Computing Services management.
- 2 Any Faculty or Individual MUSIC users who have not applied for and received User-IDs on alternative platforms will be contacted by Academic Computing Services staff and encouraged to do so if they wish to maintain their access to an academic host system.
- 3 After the end of the second summer term, all MUSIC User-IDs will be purged and MUSIC/SP will be removed from the mainframe system.

If you have any questions or comments about the de-installation of MUSIC, or the transition away from MUSIC as the primary interactive system on the academic mainframe, please direct them to Dr. Philip Baczewski (ISB 119, 565-2324). ■

SAS continued from page 17

In particular, it will solve the problem with utilization of memory and disk space for SAS datasets. Its datasets also have different characteristics as compared to SAS version 5.18. Hence, it is a good idea for both SAS 6.06 and SAS 5.18 users to convert their data to SAS 6.07 datasets. Sample conversion programs are presented later in this article.

Although there are differences between SAS 5.18 and SAS 6.07, your old SAS program will run without any modification. There are, however, several new features in version 6 of the SAS software which may help your job run more efficiently. In the next issue of *Benchmarks* I will review the major features in SAS version 6.07 which are not available in version 5.18.

Running SAS 6.07 on CMS

Similar to previous versions of SAS, SAS 6.07 under the CMS operating system can be either executed in batch mode or as an interactive session. You need to issue two commands from the CMS Ready; prompt to execute SAS:

Ready;

ntlink sas607

Ready;

sas fn

(*fn* refers to the CMS filename which contains all SAS commands. This file will have a CMS filetype of SAS).

If you want to run SAS interactively, you would only issue the SAS command without providing *fn*.

Accessing Data Files

Unlike version 5.18, SAS 6.07 does not require the use of the CMS command **filedef** to assign a reference name to the data file. You can refer to a data file as

a part of the SAS **INFILE** statement. For example:

```
Data Test;  
Infile 'Test Data A';  
Input etc...;
```

When this program is executed, the data which is contained in the CMS file called *Test Data A* will be accessed by SAS.

In the same way, a SAS data library is no longer assigned using the CMS **filedef** command. Instead, you can use the SAS statement:

Libname *name engine 'minidisk'*;

Where:	name	is any valid SAS name. It can be any word with 8 or less characters.
	engine	is one of the valid SAS Data Engine types. Typically this will be one of the following: V6 for SAS version 6 datasets. This is the default type. V5 for SAS version 5.18 datasets. XPORT for SAS transport format datasets.
	minidisk	is the one alphabetic character designated for your CMS minidisk on which you have write access. Typically, this is your A disk.

The section on converting SAS version 5 datasets to version 6 datasets gives an example of how to use the Libname statement.

Running SAS 6.07 on OS/MVS

The default catalog procedure for SAS on OS/MVS remains version 5.18. In order to execute version 6.07 on OS/MVS, you will need to change the **// EXEC SAS** to **// EXEC SAS607**.

Accessing Data Files

SAS 6.07 allows you to access data files stored on one of the OS/MVS Academic Disk packs in two ways. First, a data file can be assigned using the conventional DD statement. Optionally, it can be assigned using the SAS **FILENAME** statement. The following examples show both methods.

Example 1: Accessing Data Files Using DD Statements

```
// EXEC SAS607  
//DATAIN DD DSN=dsname,UNIT=SYSDA,VOL=SER=ACADnm,  
//DISP=SHR  
Data Sample;  
Infile DATAIN;  
Input etc....
```

Please see SAS on page 20

ICPSR Summer Programs

By Panu Sittiwong, Research & Statistical Support Manager (PANU@UNT.EDU)

From June 29, 1992 to August 21, 1992 the Inter-university Consortium for Political and Social Research (ICPSR) will sponsor a series for Quantitative Methods Training. This summer program will be divided into two sessions. The first session starts on June 29 and ends on July 24. The second session will start on July 27 and end on August 21. Each session will have a series of lectures, workshops, and a special one-week workshop.

Session I

The first session schedule includes:

Lectures

- Quantitative Methods of Program Evaluation.
- Measurement and Design of Social Research.
- Basic Mathematics.
- Mathematics for Social Scientists.
- Intro. to Computing.
- Adv. Topics in Social Research.

Workshops

- Mathematical Models: Game Theory.
- Quantitative Historical Analysis.
- Maximum Likelihood Estimation.
- Latino Research Issues.
- Intro. to Stat. & Data Analysis I.
- Intro. to Regression Analysis.
- Regression Analysis (Linear Models).
- Multivariate Statistical Methods.
- Scaling and Dimensional Analysis.
- Quantitative Analysis on Latin America.

Session II

The second session schedules include:

Lecture

- Intro. to Computing.
- Formal Models of Social Systems: Dynamic Models.
- Matrix Algebra.
- Adv. topics in Social Research.
- Dynamic & Longitudinal Analysis.

Workshops

- Regression Analysis (Linear Models)
- LISREL Models: General Structural Equations.
- Structural Equation (Causal) Models
- Time Series Analysis.
- Mathematical Models: Rational choice.
- Intro. to Stat. & Data Analysis II.
- Categorical Data Analysis.
- Adv. Analysis of Variance.
- Quantitative Analysis of Crime and Criminal Justice.

Special Workshops

- National Medical Expenditure Survey (NACDA) (June 8-12).
- Logit & Log-Linear Models (June 22-26).
- LISREL Models I: (July 27-31).
- LISREL Models II: (August 3-7).
- Utilization of Data Resources from the 1990 Census (June 15-19).
- Management of Machine-Readable Social Science Information (August 10-14).
- Item Response/Measurement Theory (July 6-10).
- Secondary Analysis of Data Collections on Substance Use by Youths (July 13-17).

For more information contact either Dr. Valerie Martinez at (817) 565-2276 or Panu Sittiwong at (817) 565-2324. ■

SAS continued from page 19

Example 2: Accessing Data Files Using The FILENAME Statement

```
// EXEC SAS607
Filename DATAIN 'dsname' UNIT=SYSDA VOLSER=ACADnn DISP=SHR
Data Sample;
Infile DATAIN;
Input etc....
```

Where: *dsname* is the OS/MVS dataset name. Typically, it starts with the word USER.

nn is the volume number. It is either 00, 01, 02, or 03.

Similarly, permanent SAS data file may also be assigned in two ways, using the DD statement or using the SAS LIBNAME statement. The syntax of both statements is similar to the above examples.

Converting SAS Version 5 Datasets to SAS 6.07 Datasets

Although SAS 6.07 can directly read version 5 datasets, it is a good idea to convert your datasets to the new version. In addition to its efficiency in disk space usage, there are several options which you can use with version 6 datasets. These features include indexing and dataset compression. The next two example programs show the setup for converting version 5 datasets. The programs can also be used to convert the SAS Catalog.

Example 3: Converting Version 5 Datasets and Catalogs to Version 6.07 Datasets and Catalogs Under OS/MVS

```
// EXEC SAS607
Libname sasfile5 V5 'v5dsname' UNIT=SYSDA VOLSER=ACADnn DISP=(OLD,DELETE);
Libname sasfile6 V6 'v6dsname' UNIT=SYSDA VOLSER=ACADnn
DISP=(NEW,KEEP) SPACE=(TRK,(10,5))
PROC V5TOV6 IN=sasfile5 OUT=sasfile6;
```

Where: *v5dsname* is the OS/MVS dataset name for the version 5 dataset. Typically, it starts with the word USER.

v6dsname is the OS/MVS dataset name for the version 6 dataset. Typically, it starts with the word USER.

nn is the volume number. It is either 00, 01, 02, or 03.

After the job is executed, SAS will create a new version 6.07 dataset and the version 5 dataset will be deleted from the system. If you want to keep the old dataset, you should change the word DELETE to KEEP.

General Information

Example 4: Converting Version 5 Datasets and Catalogs to Version 6.07 Datasets and Catalogs Under CMS

```
Libname sasfile5 V5 'minidisk'  
Libname sasfile6 V6 'minidisk'  
PROC V5TOV6 IN=sasfile5 OUT=sasfile6;
```

Where: *sasfile5* is the CMS filetype of the version 5 dataset.
sasfile6 is the CMS filetype which you want to assign to the new version 6.07 dataset.
minidisk is the CMS minidisk letter. Typically it is A.

After the job is executed, SAS will create a new version 6 dataset on your minidisk which you assign on the LIBNAME command. There will be as many new files as there are dataset members. All of them will have the filetype of *sasfile6*.

If you have any questions concerning the new version of SAS, please contact one of the Academic Computing Services SAS consultants. They can be reached at (817) 565-2324, or you can come by the main office located in ISB119 during office hours (8:00 a.m. - 5:00 p.m., Monday — Friday). We also invite any comments you may have concerning SAS version 6.07. ■



Information Resources Council News

Minutes provided by Sue Harrison, Recording Secretary

Information Resources Council Members: Philip Baczewski, Computing Center (ex-officio); Dave Barker, TCOM - Physiology; Bill Buntain, Computing Center (ex-officio); Cengiz Capan, College of Business; Carolyn Cunningham, Financial Aid; Jim Curry, Micro Maintenance (ex-officio); Stephen Farish, College of Music; Paul Fisher, Computer Sciences; Frank Forney, TCOM - Academic Computing; Chuck Fuller, Business Services; Don Grose, UNT Libraries; Richard Harris, Computing Center (ex-officio); Tom Newell, Telecommunications; Don Palermo, Admissions; Sue Pierce, School of Community Services; Paul Schlieve, Computer Education & Cognitive Systems; John Todd, Political Science; Ray Vondran, Library and Information Sciences (Chair); Sue Harrison, Computing Center (Recording Secretary).

Thursday, May 7, 1992

The minutes of the April 21, 1992 meeting were approved. Bill Buntain reported that the Task Force on Network Communications had not met to deal with the network directions issues; although they have been exploring alternatives and identifying sources of funds.

Paul Schlieve reported that his committee is attempting to clarify some short-term directions, such as: 1) continued use of WordPerfect Office mail with the existing communication servers; and 2) endorsing Pegasus Mail as a viable alternative. The

committee has begun electronic dialogue on issues dealing with electronic mail etiquette, and standards. He stated that the campus needs to have policy and guidelines documents developed.

Bill Buntain announced that there is a plan to establish a state-wide electronic mail system. Contacts have been established with the state and UNT has agreed to participate in the state-wide committee studying the issue. There will also be a subcommittee trying to establish standards for electronic signing systems.

Vondran announced that the Instructional Technology Task Force is forwarding their final report to Dr. Brownell which reflects findings that the UNT faculty need maintenance of their existing equipment as well as education regarding its use, and that the amount of resources put into instructional technology on campus needs to be expanded. The report recommends that instructional technology be part of the domain of the Information Resource Council in the form of a standing committee composed of representatives of various schools and colleges, with ex-officio members from the Computing Center, Media Library, Texas Center for Technology, and the Center for Instructional Services. Vondran suggested that the IRC needs to be thinking about the formation of that committee and may want to move forward as early as fall to implement some sessions for faculty training.

Chairman Vondran reported that the issue of moving the Computing Center out of the ISB has come up again. Richard Harris commented that even though the Computing Center had shown that it would not fit in the Quad, there was some discrepancy between the Computing Center's estimate of its needs and the space committee's estimate. Computing Center staff has worked for the past week putting together a room-by-room documentation of existing space assignments; and after having met with Roger Simon, feels

that the Computing Center's estimate of needs looks reasonable and accurate. The committee will begin to try to fit the Computing Center into Quad II, GAB or Marquis Hall. Harris reiterated that the Computing Center would like to stay where it is.

Cengiz Capan distributed the minutes of the May 5 GALC meeting. He explained the four options discussed by the committee for distributing the \$76,000 it has left over this year, and reported that the committee had voted to proceed with Option 3 which was to divide the total money according to the original funding formula, with a recommendation that by the end of October 1992, all of the labs will have upgraded their XT's to 386sx level machines and that the labs upgrade the majority of their AT's to 386sx machines. It was also agreed that members of the GALC form a consortium to determine how best to help those areas that are not fully funded by this particular option.

Sue Pierce reported that her committee has received a number of suggested changes for the Supported Items List, and is investigating them. The committee has discussed the issue of a standard menu, and may have something to report at the next IRC meeting. The committee is still collecting computing committees' charges in order to complete the list. In response to a request for two more members for her committee, to replace John Todd and Frank Forney, Vondran said that Neal Tate automatically replaced John Todd on her committee and TCOM has not replaced Frank Forney yet, so that position would just be vacant until that is done.

The next IRC meeting will be Tuesday, June 16, 1992, 2:00-4:00 p.m. in the Administration Building Board Room. ■



Academic Computing Services is offering the following short courses for the 1992 summer sessions. Please preregister to attend (a registration form can be found at the end of this issue). **A maximum of 10 people will be admitted to each of the courses held in ISB 110. A maximum of 8 people will be admitted to each of the courses held in ISB 123.** Academic Computing Services reserves the right to cancel ANY course that has 5 people or less registered 3 days before the date of the course.

PLEASE NOTE: Faculty and students have first priority to register for these classes. All people registering for hands-on (ISB 110) HDS, VAX and/or UNIX courses should have current User-IDs. Applications for User-IDs are available in the Computing Center main office (ISB 119).

HDS, VAX, AND UNIX COURSES

1. **Introduction to IBM Job Control Language (JCL)** — A two-hour session to be held in the Academic Computing Conference Room (ISB 123):
 - **Tuesday, June 16: 3-5 p.m. Instructor: George Morrow**
2. **Introduction to CMS** — A two-hour session to be held in the Science Library (ACS General Access Lab, ISB 110):
 - **Monday, June 15: 3-5 p.m. Instructor: James Yarbrough**
3. **Introduction to VAX/VMS** — A two-hour session to be held in the Science Library (ACS General Access Lab, ISB 110):
 - **Wednesday, June 17: 3:00-5:00 p.m. Instructor: Staff**
4. **Introduction to UNIX** — A two-hour session to be held in the Science Library (ACS General Access Lab, ISB 110):
 - **Thursday, June 18: 3-5 p.m. Instructor: Marc St.-Gil**
5. **Introduction to vi** — A two-hour session to be held in the Science Library (ACS General Access Lab, ISB 110):
 - **Monday, June 22: 3-5 p.m. Instructor: Marc St.-Gil**

General Information

STATISTICAL PACKAGE COURSES

1. **Introduction to SAS** — A two-hour session to be held in the Science Library (ACS General Access Lab, ISB 110):
 - Tuesday, June 23: 2-4 p.m.
Instructor: Panu Sittiwong
2. **Introduction to SAS on CMS** — A one-hour session to be held in the Science Library (ACS General Access Lab, ISB 110):
 - Monday, June 29: 3-4 p.m.
Instructor: Panu Sittiwong
3. **Introduction to SAS on UNIX** — A one-hour session to be held in the Science Library (ACS General Access Lab, ISB 110):
 - Monday, July 20: 4-5 p.m.
Instructor: Panu Sittiwong
4. **Introduction to SAS PC** — A one-hour session to be held in the Science Library (ACS General Access Lab, ISB 110):
 - Thursday, June 25: 4-5 p.m.
Instructor: Phanit Laosirirat
5. **Introduction to SPSS** — A three-hour session to be held in the Science Library (ACS General Access Lab, ISB 110):
 - Wednesday, June 24: 1:00-4:00 p.m.
Instructor: James Yarbrough
6. **Introduction to SPSS PC+** — A three-hour session to be held in the Science Library (ACS General Access Lab, ISB 110):
 - Tuesday, June 30: 2-5 p.m.
Instructor: Phanit Laosirirat

WIDE AREA NETWORK COURSES

1. **Introduction to BITNET** — Prior knowledge of at least one of the following interactive operating systems is required: CMS, MUSIC, VAX/VMS. A two-hour session, to be held in the Academic Computing Conference Room (ISB 123):
 - Thursday, July 2: 3-5 p.m.
Instructor: Philip Baczewski

2. **Introduction to the Internet** — Prior knowledge of at least one of the following interactive operating systems is required: VAX/VMS, CMS, UNIX, MS-DOS, MAC. A one and a half-hour session, to be held in the Academic Computing Conference Room (ISB 123):
 - Tuesday, July 21: 3-5 p.m.
Instructor: Billy Barron

3. **Introduction to USENET** — Prior knowledge of at least one of the following interactive operating systems is required: VAX/VMS, UNIX, MS-DOS, MAC. A one-hour session to be held in the Computing Center Conference Room (ISB 123):
 - Thursday, July 23: 4:00-5:00 p.m.
Instructor: Billy Barron

MICROCOMPUTER COURSES

1. **Introduction to WordPerfect 5.1 for Students** — Prior knowledge of basic DOS commands required. Bring one 5 1/4" low-density formatted diskette. If you are comfortable with WP 5.0 do not take this class. A three-hour session to be held in the Science Library (ACS General Access Lab, ISB 110):
 - Wednesday, June 10: 2:00-5:00 p.m.
Instructor: Sandy Franklin
2. **Introduction to Procomm Plus** — A one-hour session to be held in the Academic Computing Conference Room (ISB 123):
 - Wednesday, July 1: 3:30-4:30 p.m. Instructor: Eric Neale
3. **Introduction to Macintosh for Students** — A two-hour session to be held in the Science Library (ACS General Access Lab, ISB 110):
 - Thursday, June 11: 3:00-5:00 p.m.
Instructor: Eric Neale ■

Computing Center Staff Activities

Academic Computing Services

Dr. Philip Baczewski, Acting Director of Academic Computing, has assumed the editorship of *NetMonth*, the BITNET Electronic Magazine. See page 14 in this issue of *Benchmarks* for further information about *NetMonth*.

The ACS General Access Lab Manager, Eric Lipscomb, is in the process of recording an album with his band "Green Chili Burp and the Aftertaste" in Lubbock, Texas. The album, entitled *Sacrificing Toasters to Alien Poets*, will be released locally on CD in the fall of 1992. In the process, Eric will be legally adopting his professional name of Eriq Oliver Neale. His network account names will be changing to NEALE to reflect this name change. He can still be reached via Internet mail at Lips@unt.edu as well as neale@ccl.unt.edu.

Administrative Computing

Linda Wallace, Student Records Programmer Analyst, received a semester membership for two in the UNT fitness program for her stair climbing efforts in April.

Transitions

Stanley Sawyer, Assistant to the Associate Vice President for Computing, was honored for his service to the University at a retirement reception on April 28.

The following people were hired on or after January 1, 1992:

- Michael Katon (PT — Operations)
- Blair Copeland (PT — Network & Micro. Services)

- **Steve Blackmon** (PT — Network & Micro. Services)
- **David Roberts** (PT — Network & Micro. Services)
- **Andy Mears** (PT — Network & Micro. Services)
- **Samina Sikander** (PT — ACS Lab)
- **Kailai Zhou** (PT — ACS Lab)
- **Vahid Shahkolaei** (PT — ACS Lab)
- **Luanne Linke** (FT — Administrative Computing)

The following people terminated their employment on or after January 1, 1992:

- **Scott Harper** (PT — Operations)
- **Greg Keene** (PT — Network & Micro. Services)
- **Eric Swanbeck** (PT — Network & Micro. Services)
- **Lee Oldham** (PT — Operations)
- **Joe Anaya** (FT — Administrative Computing)
- **Paul Burgdorf** (PT — Academic Computing)
- **Steve Blackmon** (PT — Network & Micro. Services) ■

Ode to a Spell Checker

Seen on a bulletin board and posted to IPCT-L@GUVU

I have a spell checker

it came with my PC,

It plainly marks four my revue
mistakes i cannot sea.

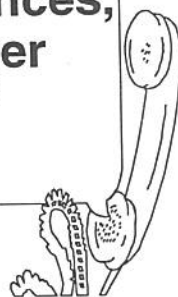
I have run this poem threw it

I'm sure your please too no

Its letter perfect in its weigh

my checker tolled me sew ... ■

Calls For Papers, Conferences, And Other Items of Interest



We have received the following "calls" and announcements from various organizations.

Call for Papers, Proposals

- **ECHT '92, Fourth ACM Conference on Hypertext, November 30-December 4, 1992, Milano, Italy** — ECHT '92 is the second in a series of European conferences on Hypertext and Hypermedia that alternates with the U.S.-based Hypertext conferences coordinated and sponsored by ACM SIGLINK. Original papers, proposals for panels, tutorials, technical briefings, demonstrations, videos, and poster sessions are invited. Deadline for submissions is **July 13, 1992**. For more information contact Polle Zellweger, U.S. coordinator, Xerox Parc, 3333 Coyote Hill Rd., Palo Alto, CA 94304 Phone: 415-812-4426 Fax: 39-2-23993411 Internet: paolini@ipmell.polimi.it
- **World Conference on Educational Multimedia and Hypermedia, June 23-26, 1993, Orlando, Florida** — ED-MEDIA 93 is an international conference sponsored by the Association for the Advancement of Computing in Education (AACE). The conference welcomes research, development, and application proposal submissions on all topics related to multimedia and hypermedia for all disciplines and levels of education. Deadline for submission of proposals is **October 15, 1992**. For further information contact ED-MEDIA 93, AACE, P.O. Box 2966, Charlottesville, VA 22902 Phone: 804-973-3987, Fax: 804-978-7449, Internet: AACE@virginia.edu
- **1993 International Workshop on Intelligent User Interfaces, January 4-7, 1993, Buena Vista Palace Hotel, Walt Disney World Village, Orlando, Florida** — The goal of this workshop is to explore ways in which techniques for knowledge representation, inferencing, modeling, and presentation can provide the adaptability and reasoning capabilities required for more intelligent human-computer interaction. Notification of intention to participate and potential titles of submissions is requested before **July 1, 1992**. Limited financial support is available for deserving students. Interested students should submit a letter to the Workshop Secretariat describing their research interests and current projects along with an endorsement from their advisor no later than **August 25, 1992**. Further information can be obtained from Bill Hefley, Workshop Secretariat, International Workshop on Intelligent User Interfaces, Software Engineering Institute, Carnegie Mellon University, Pittsburgh, PA 15213. Phone: 412-268-7793 Internet: ii-Workshop93.chi@xerox.com
- **13th National Computer Conference & Exhibition, Riyadh, Saudi Arabia, November 21-26, 1992** — The theme for this conference is "Information Technology Transfer." Deadline for submission of papers is **June 27, 1992**. For more information, contact Chairman of Research Committee, The 13th National Computer Conference, Directorate of Information Systems, King Abdulaziz City for Science & Technology (KACST), P.O. Box 6086, Riyadh 11442, Saudi Arabia Phone: 966-1-481-3273 Fax: 966-1-488-3118 BITNET: ncc13@skacs00

Awards, Workshops, Conferences, and Seminars

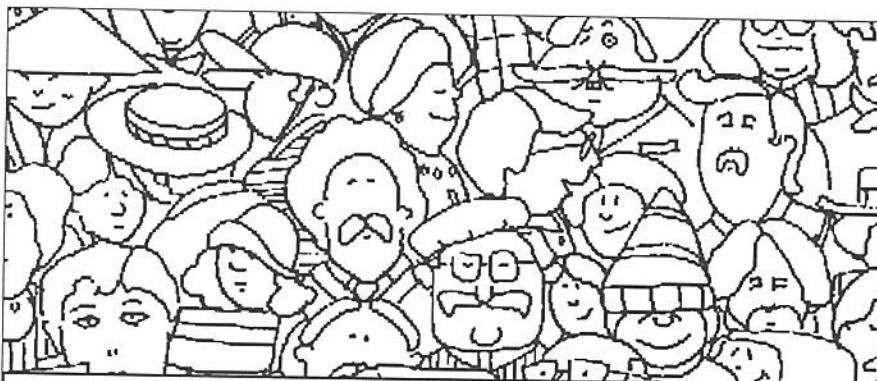
- **Seminar in "Contemporary Topics in Computational Linguistics," Tzigrav Chark (Batak Lake), Rhodope Mountains, Bulgaria, September 24-29, 1992** — This seminar is intended for, but not limited to, university students. The cost

is \$100 for full-time students, \$140 for academic employees, and \$200 for other participants. The fee includes attendance at the seminar, abstracts of the lectures, refreshments, and a reception party as well as meals and accommodations at a 2-star hotel. Deadline for registration is **September 9, 1992**. Further information can be obtained from Ruslan Mitkov Internet: ruslan@cs.usm.my

- ❑ **Fullbright awards for research and/or university lecturing abroad** are available for periods ranging from three months to a full academic year. There are openings in over 135 countries and, in many regions, the opportunity exists for multicountry research. **Application deadlines are June 15, 1992 for Australasia and South Asia; August 1, 1992, for all other world areas.** Requests for information/application materials can be made to the Council for International Exchange Scholars, 3007 Tilden St., NW, Suite 5M, Box B-NET, Washington, DC 20008-3009. Phone: 202-686-7877. Internet: cies1@gwuvvm.gwu.edu

- ❑ **Sixth International Conference on Symbolic Logical Computing (ICEBOL6), October 15-16, 1992, Madison, South Dakota 57042** — This conference is designed for teachers, scholars, and programmers who want to meet to exchange ideas about computer programming for non-numeric applications — especially those in the humanities. For more information, contact: Eric Johnson, 114 Beadle Hall, Dakota State University, Madison, SD 57042. Phone: 605-256-5270 BITNET: eric@sdnet

- ❑ **Conference on Multimedia in Education & Industry, July 23-25, 1992, Charleston, South Carolina** — Registration deadline is **June 22, 1992**. Preconference workshops are available for graduate credit. For further information, contact Ronald Plemmons. Phone: 800-553-7702



BENCHMARKS FORUM

*BENCHMARKS FORUM is intended to serve as a vehicle for answering questions that may be of general interest to the user community. If you have a question, please send electronic mail to the **Benchmarks** editor (AS04@UNTVM1) or write it down and drop it by the Computing Center. We will try to answer it in the next issue.*

Question: *How can I forward my E-mail to another host? I'm tired of logging on to different computers just to check my mail.*

Answer: The answer to this question depends on the host(s) from which you are wishing to forward your mail.

- **VAX:** To forward mail from the VAX to another machine, you use the **SET FORWARD** command within MAIL followed by the E-mail address. The address needs three sets of double quotes. For example, to forward mail to JESTER@CC1.UNT.EDU, type the following at the MAIL> prompt:

```
MAIL> SET FORWARD IN% "JESTER@CC1.UNT.EDU"
```

To see the setting, type **SHOW FORWARD** while in mail.

```
MAIL SHOW FORWARD
```

```
Your mail is being forwarded to IN% "user-id@cc1.unt.edu".
```

If you wish to turn off your forwarding, just type **SET NOFORWARD**.

- **Solbourne (and most, if not all, UNIX systems):** To forward mail, create a file in your home directory called **.forward**. The contents of this file should be the E-mail address that you wish to forward mail to. To see the current setting, type **cat .forward**. If you wish to turn off forwarding, just remove the file.
- **CMS:** Limited mail forwarding capabilities are available on the VM/CMS system through the use of the **GONE** command. Faculty, staff and individual students can use **GONE** to forward their CMS mail to another BITNET User-ID. While logged on to CMS the following command should be used:

```
GONE (FORWARD FILES nodename User-ID
```

Note that the nodename is specified first in this case. Once the above command has been entered and accepted, you can use the **GONE** command by itself to disconnect from CMS. While you are disconnected, all mail and files coming to that User-ID will be forwarded to the location that you specified.

General Information

To forward mail to the sample User-ID (ID00) on the VAX, for example, you could specify the following commands:

GONE (FORWARD FILES UNTVAX ID00
GONE

Please note that extended use of this facility is discouraged, since GONE continually uses valuable system resources on CMS.

- **Pegasus Mail:** To forward mail in Pegasus, select the "Preferences" option from the main Pegasus menu and look for an option called "edit eXtended features." If this option does not appear at the bottom of the

list, your network supervisor has not authorized you to change some of these advanced settings and will need to do so before you can set your forwarding.

Once you have selected "edit eXtended features," another window will open with several options. The first two, "Autoforward" and "Internet AF," deal with forwarding. The first option allows you to select another file server to forward your mail to.

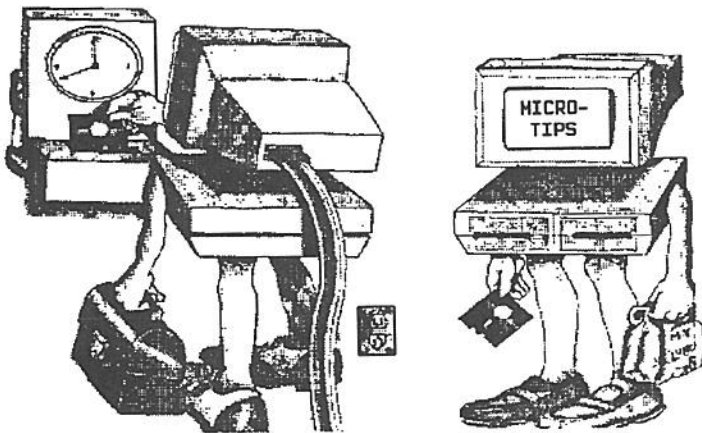
To forward mail from JSMITH's account on ACS to CC1, for example, enter "CC1/JSMITH" in the "Autoforward:" line. Note that the server you specify must be set up to receive

Pegasus mail and the account name you specify must exist on that server.

To forward JSMITH's mail from CC1 to the Solbourne account, leave the "Autoforward" line blank and put "jsmith@sol.acs.unt.edu" in the "Internet AF:" line. This will only work if CC1 has an SMTP connection via the Charon Gateway (which it does).

If you don't know how your server is connected via Pegasus or if you are connected via Pegasus, contact your network manager or have your manager contact Mike Murdock at the Computing Center (565-2324). ■

MICROCOMPUTERS



*This column is intended to serve as a forum for sharing useful tips on making more productive use of microcomputers. If you have a tip that you feel may be of use to campus users, submit it to the **Benchmarks** Editor for possible inclusion in a future issue.*

E-Mail Courtesy at UNT

By Norman Howden, Assistant Professor, Library and Information Sciences

For all the talking we do about the "information explosion," no one can appreciate it more than when they get engulfed in the flood of electronic mail. Following are some tips and tricks that make can make using E-mail easier.

All of us need to sort through incoming mail to choose the useful and delete the unwanted. That can be a lot easier if, before you ever start using mail, you make a plan for storing the many messages that you will want to keep, either as receipts or for future reference. Choose to store mail in a mail directory on your lan's "home" directory or on a workstation disk drive. Under the mail directory, develop subdirectories for the committees you are on, the topics you teach, the areas you administer, and so on. We all need subdirectories for correspondence, action items from the boss, and SYA. With the subdirectories set up you can quickly decide where to save messages that deserve to be saved.

A strategy that may become necessary is to back up the saved messages to floppy, perhaps compressing them to conserve space, once they get to be a year old.

It is quite important to clean out your E-mail messages because the number of stored messages can have a really serious impact on the availability of LAN disk space.

A really crucial aspect of E-mail is the way messages are formatted. Sentences in E-mail have visual impact. People read E-mail more like intimate conversation than formal documents. Short paragraphs are in order, with space between them that are akin to pauses in verbal conversation. Additional visual impact may be achieved with indentation and bolding. Everything done to make the content easy to read in small clear pieces will minimize the time spent reading by the recipient and that redounds favorably to the sender.

What is considered courteous in E-Mail messaging? My checklist includes:

- **Don't** send messages to "everyone" unless there's a flash flood on the way or you're handing out free one dollar bills.
- **Don't** yield to temptation - keep what you say within bounds of what you would say eyeball-to-eyeball.
- **Do** compose your message with extra wide margins so when it's viewed within the window of the mail software, half the text isn't out of view.
- **Do** outline your points so that the reader doesn't have to struggle to find them.
- **Do** "quote" prior messages if you include them inside your electronic message, and you really should give credit to the authors.
- **Do** take time to spell correctly.

- **Do** make your paragraphs short and to the point.
- **Do** ask your LAN Manager where to post electronic notices about babysitting jobs, cars for sale, and "hot" phone numbers.

Formatting attachments is one of the skills that more people should learn. When you send an attached file, particularly one that goes to a large audience, remember that not everyone has the same printer. That puts the burden on you to use the most *generalizeable* features in the word processor. This means, for instance, that here at NT where WordPerfect is widely used, that how you underline matters. People like to make up forms and send them out attached to messages, but if the underline is made with the underline character instead of the line draw feature, each recipient will have to edit it. Similarly, it is best to use features to make headings **Large, Very Large, and Extra Large**, rather than changing fonts. One font at the start of the document makes it possible to change one code rather than having to search through and change a font code at 39 places in the document.

Finally, take one last look at each message. Are all the intended addressees included? Is the layout of the message simple and easy to read? Have you included the files that contain supporting documents? If you can answer "yes" to these questions, you're ready to go! ■

WordPerfect User's Group Summer Schedule

The WordPerfect User's Group will continue meeting this summer. The schedules are as follows:

- **June 19, 2-3pm**, SCS Lab - Chilton 255, main focus - NOTEBOOK utility to create secondary files.
- **July 17, 2-3pm**, SCS Lab - Chilton 255, main focus - Documented but Unadvertised Features of WP 5.1 (Advance, Block Protect, Document Summary, and Window)
- **August 21, 2-3pm**, SCS Lab - Chilton 255, main focus - Sort Function: Line, Paragraph and Secondary Merge File. ■



Virus Update

Compiled by Claudia Lynch, *Benchmarks*
Editor (BITNET: AS04@UNTVMI)

Virus Jokes (from VIRUS-L)

- **Real power-user's** think "Your PC is Stoned!" is part of the Microsoft copyright message.
- **Political Viruses:**
 - George Bush Virus — doesn't do anything, but you can't get rid of it until November.
 - Ted Kennedy Virus — crashes your computer but denies it ever happened.
 - Warren Commission Virus — Won't allow you to open your files for 75 years.
 - Jerry Brown Virus — Blanks your screen and begins flashing an 800 number.
 - David Duke Virus — Makes your screen go completely white.
 - Congress Virus — Overdraws your disk quota.
 - Paul Tsongas Virus — Pops up on December 25 and says "I'm Not Santa Claus."
 - Pat Buchanan Virus — Shifts all output to the extreme right.
 - Dan Quayle Virus — Forces your computer to play "PGA Tour" from 10 a.m. to 4 p.m. 6 days a week.
 - Bill Clinton Virus — This virus mutates from region to region. We're not exactly sure what it does.
 - Richard Nixon Virus — a.k.a. the "Tricky Dick Virus" you can wipe it out, but it always makes a comeback.
 - H. Ross Perot Virus — same as the Jerry Brown virus, only nicer fonts are used, and it appears to have had a lot more money put into its development. ■

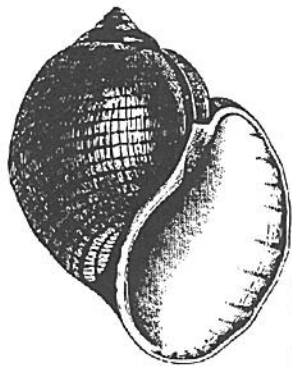
VAXCLUSTER USAGE STATISTICS

April Top Ten Programs: CPU Time Used

Program	Description	CPU Time	Percent of Total
1. User programs	Compiled Programs	2 12:49:50.2	17.8
2. MOPAC	Quantum Mechanics	2 03:59:43.00	15.2
3. DEFRAG	Disk Optimizer	2 03:27:42.39	15.0
4. GAUSSIAN	Molecular Modelling	2 02:19:59.87	14.7
5. NEWS	ANU News Utility	2 00:49:15.90	14.3
6. MAIL_SERVER	VMS Mail Server	0 12:01:13.41	3.5
7. LOGINOUT	User Login	0 08:16:43.85	2.4
8. MAIL	VMS Mail Utility	0 07:43:33.38	2.3
9. BACKUP	Disk Backups	0 07:30:30.87	2.2
10. IRC	Internet Relay Chat	0 06:41:40.72	2.0
Total		14 06:19:04.28	

April Top Ten Programs: Frequency of Runs

Program	Description	Number of Runs	Percent of Total
1. SET	VMS Utility	148116	25.4
2. LOGINOUT	User login	129560	22.2
3. DIRECTORY	VMS Utility	53112	9.1
4. DELETE	VMS Utility	51449	8.8
5. User programs	Compiled Programs	28726	4.9
6. MAIL_SERVER	VMS Mail Server	23117	4.0
7. SYSLOGIN	User Login	18289	3.1
8. MAIL	VMS Mail Utility	14438	2.5
9. TYPE	VMS Utility	13235	2.3
10. SEND	BITNET Message Utility	11640	2.0
Total		583944	



The UNIX Shell

By Marc St.-Gil, UNIX Systems Administrator (mstgil@unt.edu)

More I/O Redirection Techniques

Hello! And welcome back to The UNIX Shell. In this month's column I am going to discuss more I/O redirection techniques and how they can be used in command aliases and shell scripts as a continuation from last month. As you may recall from last month, I/O redirection is most often used to capture the output of a UNIX command that would normally print to your terminal screen. This can be very useful with programs that produce large quantities of output or when you

want to save a copy of the output for later perusal or perhaps to print. Another use of I/O redirection is to capture the output of a command to use as an argument to another program. If you don't know what I mean by "an argument to another program" here is a little example. If I enter the command **more myfile**, then the word **myfile** is an argument to the **more** program. The **more** command is one of those nifty UNIX programs that will accept either a filename argument or text fed to its STanDard INput (STDIN) stream. (See the previous two columns for more explanation on what STDIN is — *Benchmarks*, May 1992 and March/April, 1992.)

Let's first start with grabbing the output from a command to use as an argument. This form of output redirection is called *command substitution*. What happens is that each word of output from the substituted command becomes an argument to the command being created. Command substitution is invoked by surrounding a complete command with backquotes (`) as an argument to another command. On a PC keyboard the backquote is usually under the tilde key <~>, at the upper left of your keyboard.

For example, what if I wanted to edit each file, whose name ends in *.txt*, in the current directory that contains the text *INSERT ADDRESS HERE LATER* so that I can insert the correct address? I could do that with one command as follows (should be typed on a single line):

```
% vi `grep -l "INSERT ADDRESS HERE LATER"
*.txt`
```

Please note that command substitution is supported in both the C-Shell, *csh*, and the Bourne Shell, *sh*, with no difference in syntax. I will be using the C-Shell for my examples because that is what you will be working in most of the time.

Now let me break down all the parts of this command. The first word, or command, on the line is *vi*. This tells the shell that we want to execute the com-

mand **vi** with the arguments that follow. The next thing on the command line is a backquote (```). This tells the shell that everything from *here* to the next backquote, seen as the last character on the line, is a command whose output we wish to substitute as arguments to the **vi** command. Since the rest of the command line is backquoted it will all be replaced by the output from the backquoted command. The backquoted command is now treated as if it were entered on a separate command line. The command **grep** is used to search files for patterns of text. The **-l** argument to **grep** tells **grep** to just output the names of all the files that contain a match for the pattern. The next argument to **grep** is the pattern we wish to search for. In this case the pattern has spaces in it so we must put quotes around it to tell the shell that all the separate words between the quotes are one argument. Otherwise the shell would pass each word of our pattern to **grep** as separate arguments and this would cause **grep** to misinterpret the words **ADDRESS**, **HERE**, and **LATER** as names of files to be searched instead of part of our pattern. So the next argument to our **grep** command is **INSERT ADDRESS HERE LATER**. The last part of our **grep** command is a file pattern that the shell will replace with matching file names. Each matching file name will be passed to our **grep** command as an individual argument.

So, if there were three files in the current directory whose names ended in *.txt* (*betty.txt*, *veronica.txt*, and *jughead.txt*) and had the text string **INSERT ADDRESS HERE LATER** in them, our final command would come out as it we had entered **vi betty.txt veronica.txt jughead.txt** at the shell prompt. All this happens behind the scenes though, so what you see after entering the original command is that **vi** starts and you are editing a file. You will still have to use the search function in **vi** to find exactly where the pattern occurred and go there to correct it. You also don't know for sure how many files matched, so you'll have to use **vi's** *edit next file command* to go from file

SOLBOURNE USAGE STATISTICS

April Top Ten Programs: CPU Time Used

Program	Description	CPU Minutes	Percent of Total
1. sas	Statistical Package	62995.4	28.5
2. g90	Gaussian 90	56183.6	25.4
3. hydqmod	User Program	23153.5	10.5
4. crack	User Program	19336.0	8.7
5. auto2	User Program	6450.5	2.9
6. hydquant	User Program	5914.4	2.7
7. yang	User Program	4084.6	1.8
8. a.out	User Program	3884.2	1.8
9. x	User Program	2675.7	1.2
10. yang101	User Program	2379.4	1.1
Total		221286.6	

April Top Ten Programs: Run Time Used

Program	Description	Number of Runs	Percent of Total
1. snmpget	User Program	435546	23.6
2. sh	Bourne Shell	156623	8.5
3. is_able	Permissions Checker	78341	4.3
4. csh	C Shell	64525	3.5
5. finger	User Program	62621	3.4
6. in.finge	User Program	53389	2.9
7. ls	Directory	51510	2.8
8. sendmai	Mailer Program	50551	2.7
9. rm	Delete File	35119	1.9
10. awk	Text Processing Lang.	34751	1.9
Total		1842504	

to file until **vi** tells you there are no more files to edit. This all takes advantage of **vi's** ability to edit a list of files in sequence. To learn more about using **vi** please come by the Computing Center office in ISB 119 and pick up a free *Introduction to Display Editing with vi* handout.

Let's look at one more example. In the file called *.cshrc* in your home directory, there is a line that reads:

```
source /home/.cshrc
```

This command causes the C-shell to process the contents of the file */home/.cshrc* as if they were at this position in the current file. If you look at */home/.cshrc* you will find a line that reads:

```
set prompt="`echo $cwd | sed s_${HOME}~_` % "
```

This is the line that sets your initial C-Shell prompt. Since the syntax of setting variables differs between C-Shell and Bourne Shell and this is C-Shell specific code, we're going to look at this from a C-Shell point of view. The first word, **set**, tells the C-Shell that we're doing variable assignment. The second word, **prompt**, is the name

of the variable to be set. The C-Shell recognizes this as a special variable that is to contain the "value" of the user's prompt. A nice feature of the C-Shell is that this "value" is evaluated in such a way that the command substitution that we learned about above can be used. The third word, `=`, is syntactical sugar that tells the C-Shell that we're through naming the variable and ready to define its value. Since the value we are going to specify has spaces in it, we enclose the entire value in quotes, `"`, at beginning and end. Next we begin our command substitution with a backquote, ```. From here to the next backquote is a command that will output the current directory if not under the user's home directory or the current directory relative to the user's home directory, abbreviated by the C-Shell convention of a tilde, `~`. For example, if the user's home directory was `/home/indiv/aa99` and the user's current directory was `/usr/local/bin`, the command would output `/usr/local/bin`. If the user's current directory was `/home/indiv/aa99/mail`, the command would output `~/mail`. And if the user's current directory was `/home/indiv/aa99`, the command would output `~`. After the closing backquote is a space, a percent, and another space. These characters will be appended to the output from the substituted command.

In the above three command output examples, the respective prompts would be `"/usr/local/bin % "`, `~/mail % "`, and `~ % "`. Please notice that we can use the pipe, `|`, I/O redirection character in substituted commands for, as Tim Allen would put it, "more power!"

Stay tuned next month when we'll start covering variable substitution in the C-Shell. ■

A Brief Overview of Electronic Mail on Sol

By Marc St.-Gil, UNIX Systems Administrator (mstgil@unt.edu)

E-Mail Addresses and Forwarding on Sol

If you have an account on Sol, then your E-mail address on Sol will be *userid*@sol.acs.unt.edu, where *userid* is the name you type at the `login:` prompt — for example, `aa99`. If you have another place where you prefer to receive E-mail, you can have all of the mail that is sent to your Sol account automatically forwarded to your preferred mail address. To do this create a file in your home directory on Sol that is called `.forward` and on one line type in the E-mail address to which you wish your mail forwarded.

For example, if I had an account `aa99` on Sol and wanted all the mail sent there to end up going to my account `aa99` on the VAX, I would log on to Sol, create a file called `.forward` and in that file enter the address `aa99@vaxb.acs.unt.edu` as the first and only line in the file. If I wanted my mail on Sol sent to my Novell account, I would first check with the manager of the Novell system to make sure that Internet mail was available on the system and find out how to send and receive it. I would then create a `.forward` file on sol using `account@system.name.unt.edu` as I did above for account `ac99` on host `vaxb.acs.unt.edu`. We are getting closer to the point now, where just about any account on any host can be set up to forward to any other account on any other host. This allows you to receive all your E-mail in one place or keep it segregated as much or as little as you like.

Sending E-Mail on Sol

As a rule, when you enter the command `mail` or `Mail` on Sol, the command that really gets invoked is `elm`. This program is a very user friendly E-mail package that is actually available on many varieties of UNIX platforms. One somewhat progressive UNIX vendor even ships `elm` as its default E-mail package. What follows is a brief introduction to using `elm` on Sol. A more detailed document is in final review and will soon be available in the Computing Center (CC) office in ISB 119 at no charge.

When you start `elm` you will be presented with a list by date of any unread mail you might have, followed by a short menu and a `Command:` prompt at the bottom of the screen. To read the first new message, which will be highlighted, just press `<RETURN>`. To select a specific mail message enter the number to the left of the message at the `Command:` prompt and press `<RETURN>` or you can use the arrow keys to move the highlight bar to the message you want to read. Then you can read the message by pressing `<RETURN>`. While reading the message, `elm` tells you how much you have read as a percentage of the whole message. You can go to the next page of the message by pressing `<SPACE>`. If you are at the bottom of the message, pressing `<SPACE>` will take you to the next message. Pressing `<i>` while reading a message will return you to the initial menu screen. If you wish to reply to a message you are reading or have selected just press `<R>`. The default editor `elm` uses for composing messages is `vi`. If you are unfamiliar with `vi` please come by the CC office and pick up a free *Introduction to Display Editing with vi* handout.

When you finish composing your reply, save and exit the vi session and **elm** will give you one last chance to change your mind before sending the message.

To send a new message, just press <m>. **Elm** will prompt you with To:, Subject:, and CC: prompts to which you should respond with the intended recipient's E-mail address, a phrase indicating the topic of the message, and other recipient addresses, if any, for the 'carbon copy list.' Then it will start up vi for you to edit your message. Again, when you finish composing your message, save and exit the vi session and **elm** will give you one last chance to change your mind before sending the message. If you have a message that you wish to delete, just select the message as described above and press . **Elm** will put a D beside the message to indicate that when you leave **elm**, this message will be deleted. If you change your mind before leaving **elm**, you can un-delete it by entering the message number at the Command: prompt to select it and then press <u> to un-delete it.

Please note that you cannot select a message marked for deletion by using the arrow keys. Once you are ready to finish using **elm** press <q> to quit. **Elm** will then ask if it can move your mail to your received folder. Taking the default answer of yes will cause all of your read messages to be stored in a file called received, in your mail subdirectory. In general, you should always let **elm** move your read messages to your received folder. The only time not to do this is if you know you are very near to exceeding your disk quota. If this is the case, you should choose not to store the messages and should instead contact an operator to request a quota increase. Once you have confirmation from the operator that your quota has been increased, you should go back and store those messages. Doing this will ensure that you never lose any mail that you wanted to keep.

After asking about storing read messages, **elm** will ask if it can delete the messages you marked for deletion. This is your last chance not to delete these messages. If you choose yes, they will be permanently deleted, if you choose no, they will be stored with your read mail. Once you have answered these questions, **elm** will take the actions that you specified and then exit, leaving you back at your shell prompt.

For more information on the many things **elm** can do that I haven't discussed here, please get the handout mentioned earlier in this article. ■

VAX/UNIX NEWS

VAX

- ❑ **Internet E-mail Changes** — On May 25th, some Internet mail changes were made. They are as follows:
 - ❶ The VAX is no longer equivalent to UNT.EDU on the Internet. A dedicated UNIX box is now UNT.EDU. This was done to offload some work from the VAX.
 - a. To maintain backwards compatibility, all current (on May 25th) VAX User-IDs have an alias set up on this box to forward mail from UNT.EDU to the VAX.
 - b. All VAX users who had forwarding set up on their VAX account as of May 25th will not have an alias on UNT.EDU to forward mail to the VAX. Instead the alias will forward mail to the same place as the VAX does. For example, let's say that AC02 on the VAX forwards mail to BARRON@CC1.UNT.EDU. The address AC02@UNT.EDU will also forward mail to BARRON@CC1.UNT.EDU.

c. VAX accounts generated after May 24th will not automatically have an alias on UNT.EDU. Aliases may be requested by sending mail to postmaster@unt.edu.

- ❷ Requests for changes to aliases can be sent to postmaster@unt.edu.
- ❸ We have some other changes that will be implemented as we have time. Exact dates have not been set as of yet, but some are as far off as a year. They are:
 - Outgoing Internet (not BITNET) VAX mail will go to the UNT.EDU before being delivered to the Internet. This will allow us to maintain one mail system that is fully Internet aware and save maintenance time in the future.
 - Outgoing Internet mail for people who have aliases will go out as userid@UNT.EDU.
 - When the Novell networks move into Netware 3.2, we may attempt to get campus-wide unique User-IDs. At that time, all users will be given UNT.EDU aliases.

If none of this made sense to you, do not worry as you are a current user none of these changes will change your current functionality. If you have any questions about this process, please feel free to send MAIL to OPERATOR.

- ❑ **HYTELNET upgraded** — HYTELNET 6.0 has been installed. It contains much more information about Internet resources.

SOLBOURNE

- ❑ **NT Gopher, Academic Information Resource, Installed** — NT Gopher provides a front-end to many resources that are available over the Internet as well as being a

VAX/UNIX SYSTEMS

document delivery system for computing documentation. NT Gopher also holds many electronic journals, databases, and phone books. We think that it will be a very valuable tool for researchers.

To run gopher from Sol, just type **gopher** at the prompt. For more information, please see page 8 of this issue of *Benchmarks*. Any comments, questions, and suggestions can be sent to gopher@unt.edu.

- ❑ **New .cshrc and .login files** — New and improved .cshrc and .login files have been installed in all home directories. The previous version has been saved as .cshrc.saved or .login.saved so that you can re-apply your customizations. It is highly recommended that you put these customizations below the last line in the new file so that if we ever need to update your .cshrc and .login files again, we can automatically re-customize your files for you.

- ❑ **Archie client changed** — The archie client on sol has been changed to a different version, the same version that is on the VAX. If you have an .archierc file, it will no longer be read, and may safely be deleted. For more changes, read the man page (type **man archie**).

- ❑ **Internet E-mail changes** — On May 25th, some Internet mail changes were made. The majority of them affected VAX users more than Solbourne users. The Solbourne related changes are:

- ① Solbourne users are now able to request incoming e-mail aliases of the nature of user@unt.edu by sending mail to postmaster@unt.edu.
- ② Outgoing Internet mail now goes to the UNT.EDU machine before being delivered to the Internet. This allows us to maintain one mail system that is fully Internet aware and save maintenance time in the future.
- ③ We have some other changes that will be implemented as we have

time. Exact dates have not been set as of yet, but some as far off as a year. They are:

- Outgoing Internet mail for people who have aliases will go out as [userid@unt.edu](mailto:user@unt.edu).
- When the Novell networks move into Netware 3.2, we may attempt to get campus-wide unique User-IDs. At that time, all users will be given UNT.EDU aliases.

If none of this made sense to you, do not worry as you will still have your current functionality. If you have any questions about this process, please feel free to send mail to *operator*.

- ❑ **HYTELNET Upgraded** — HYTELNET 6.0 has been installed. It contains much more information about Internet resources. ■

MAINFRAME TECHNICAL SERVICES

Mainframe Performance Statistics

April Top Ten Programs : Frequency Of Runs

Program	Description	# of Runs	% of Total
1. PGM=*.DD	Compiled Program	23124	19.8
2. IDCAMS	VSAM Utility	22736	19.5
3. IEWL	Linkage Editor	20331	17.4
4. SPCHLCOB	COBOL2 Report Writer	13999	10.0
5. IGYCRCTL	VS COBOL2 Compiler	11741	10.1
6. IEBGENER	IBM Utility	11214	9.6
7. IEFBR14	IBM Null Utility	4403	3.8
8. SASLPA	SAS Version 5.18	1980	1.7
9. IEV90	???	1897	1.6
10. SPSS	SPSS Version 4.0	1091	0.9

MAINFRAME TECHNICAL SERVICES

April Top Ten Programs: CPU Seconds Used

Program	Description	CPU Seconds	% of Total
1. PGM=*.DD	Compiled Program	245606	62.2
2. SPCHLCOB	COBOL2 Report Writer	51970	13.2
3. SASLPA	SAS Version 5.18	25477	6.4
4. SPSS	SPSS Version 4.0	15249	3.9
5. IGYCRCTL	VS COBOL2 Compiler	14577	3.7
6. IDCAMS	VSAM Utility	9774	2.5
7. IEWL	Linkage Editor	9289	2.4
8. COMPLET4	Academic COM-LETE	6599	1.7
9. SSS4001	Operations Automation	6141	1.6
10. IEBGENER	IBM Utility	1954	0.5

Key Causes Of Lost Productivity In April: ACAD CPU

MPU, Tape, and Disk Subsystems (HDS)

1. Replace faulty components in CPU 0 Processor. **2.94 HOURS**

Miscellaneous

1. Reset TOD clock to daylight savings time. **0.83 HOURS**

GRAND TOTAL **3.77 HOURS**

Key Causes Of Lost Productivity In April: ADMN CPU

Miscellaneous

1. DASD file maintenance on ADABAS **12.95 HOURS**
2. Reset TOD clock to daylight saving time. **0.97**

GRAND TOTAL **13.92 ■**

Operating Systems Performance Statistics for April

CPU	SYSTEM	Planned Production Hours	Production Hours Achieved	System Uptime
ACAD	VM/XA	719.65	716.71	99.6%
ACAD	MUSIC/SP	700.10	697.16	99.6%
ACAD	MVS/JES2	719.22	716.28	99.6%
ACAD	COMPLETA	718.53	715.59	99.6%
ADMN	MVS/JES2	719.27	719.27	100.0%
ADMN	COMPLETA	289.00	289.00	100.0%
ADMN	ADABASA	697.94	684.99	98.1%

- The ACAD CPU (HDS/8083) achieved 99.6% uptime in April. The HDS/7360 DASD achieved 100% uptime in April. The HDS/7380 DASD achieved 100% uptime in April.
- The ADM CPU (IBM 9121/440 processor) achieved 100% uptime in April. The HDS/7360 DASD achieved 100% uptime in April. The HDS/7380 DASD achieved 100% uptime in April. The IBM 3390 DASD achieved 100% uptime in April. The EMC Solid State Disk achieved 100% uptime in April. ■

E-mail Hits the Big Time

Posted to rec.humor.funny by Don Bashford (bashford@scripps.edu)

The following is from Bob Woodward's book, *The Commanders*:

On Monday, July 30, Pat Lang sat down to write a top-secret electronic-mail message to the DIA director, Lieutenant General Harry E. Soyster, and the other division heads within the agency. The secure electronic-mail system, called E-Mail, ... ■

MAINFRAME TECHNICAL SERVICES

Disk Backup Schedules

SYSTEM	BACKUP	DESCRIPTION
Administrative MVS/SP	Daily	Monday - Friday around 7 p.m. (after COM-LETE is shut down) & on Saturday & Sunday if COM-LETE has been up that day.
	Weekly	Full pack dumps taken each Sunday morning.
	Monthly	Full pack dumps taken on the first day of each month.
Academic MVS/SP	Daily	Monday - Sunday during the early hours of the morning.
	Weekly	Full pack dumps taken each Sunday.
	Monthly	Full volume dumps taken on the first day of each month.
MUSIC/SP	Daily	Wednesday - Monday starting at 4 a.m. and lasting about 30 minutes.
	Weekly	Tuesday mornings at 3 a.m., these last about 2 hours.
	Semester	Once a semester, a permanent backup is taken.
VM/XA	VM Weekly	Early every Wednesday morning.
	CMS mini-disks	Daily backup performed early every morning. Weekly backup every Tuesday starting after Midnight.
	Semester	Once a semester, a permanent backup is taken.
VAXcluster	Daily	Incremental backups are performed Monday - Thursday at 6 p.m. Saturday & Sunday at 5 p.m.
	Weekly	Full backups are performed every Friday beginning at 8 a.m. Generally lasts all day.
	Monthly	A "stand-alone" backup is performed monthly. Dates and times are given in the system log-on message.
	Semester	Once a semester, a permanent backup is taken.
Solbourne	Daily	Incremental backups are performed Sunday - Friday at 2 a.m.
	Weekly	Full backups are performed every Saturday at 3:30 p.m.
	Semester	Once a semester, a permanent backup is taken.



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CLIP TIP

Addressing Syntax for Mail Sent From the Internet to Other Networks*

Key: ❶ addressing syntax within the other network ❷ addressing syntax for mail sent from the Internet

Applelink ❶ user-id ❷ user-id@applelink.apple.com

CompuServe ❶ 7xxxx.yyy ❷ 7xxxx.yyy@compuserve.com

EASNet/DECnet ❶ user-id@host ❷ user-id@host.enet.dec.com

ESnet ❶ user-id@host ❷ user-id@lbl.dnet.nasa.gov

FidoNet ❶ Firstname Lastname at 1:2/3 ❷ Firstname.Lastname@f3.n2.z1.fidonet.org

JANET ❶ user-id@A.Janet.Domain.Address ❷ user-id@A.Janet.Domain.Address@nsfnet-relay.ac.uk

MCI ❶ FirstName LastName (123-4567), where 123-4567 is an MCI phone id # ❷ 123-4567@mcimail.com

PSinet ❶ user-id@host ❷ user-id%host@uu.psi.com

Sinet ❶ node:user-id ❷ user-id@node.sinet.slb.com or ❶ node1::node::user-id ❷ user-id%node@node1.sinet.slb.com

SPAN ❷ user-id%node.decnet@relay.the.net

UUNET ❶ user-id@site ❷ user-id%site@uunet.uu.net

VNET ❶ user-id@host ❷ user-id@vnetsite.ibm.com

* Taken from the *NorthWestNet User Services Internet Resource Guide* by Jonathan Kochmer, a product of NorthWestNet and the Northwest Academic Computing Consortium, Inc. (Copyright 1991 by the NorthWestNet Academic Computing Consortium, Inc. pp. 36-37).■

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